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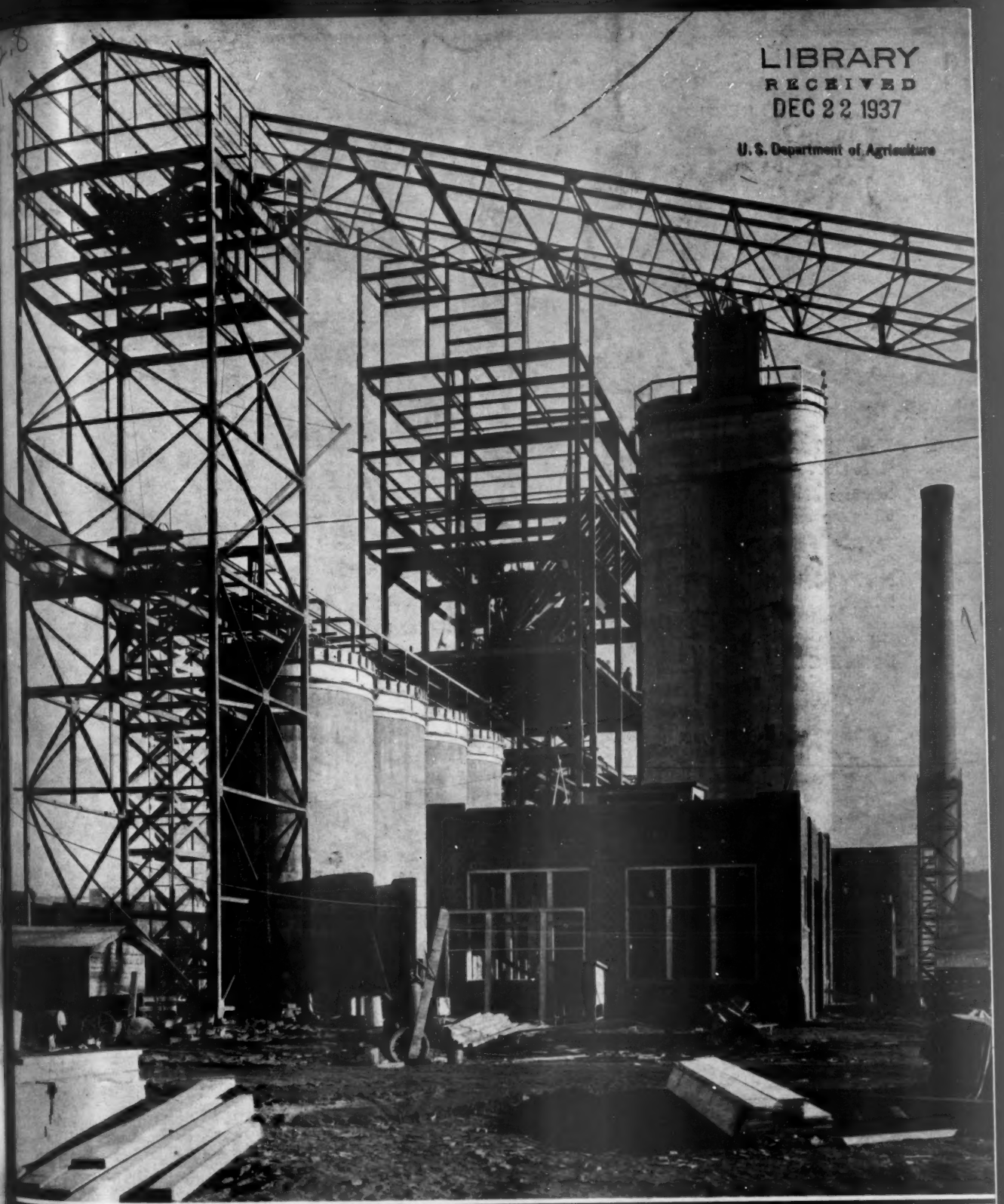

Pacific PULP & PAPER Industry

CONSTRUCTION PROGRESSES according to schedule at BELLINGHAM . . . The new PUGET SOUND PULP & TIMBER COMPANY unbleached sulphite pulp mill will begin production of 125 tons per day early in APRIL.

PURE, UNIFORM

Chlorine

FOR ALL PURPOSES

1.
FIRST STAGE CHLORINATION
in cases of multi-stage bleaching

2.
HYPOCHLORITE BLEACH LIQUOR

3.
SLIME CONTROL

4.
WATER PURIFICATION

WORKING closely at all times with pulp and paper producers, Pennsylvania Salt Manufacturing Company has had long experience in dealing with their problems. The extensive use of Chlorine by this industry, not only for bleaching but for water purification and slime control where dispensing difficulties must be reduced to a minimum, emphasizes the many advantages of Chlorine of exceptionally uniform quality and purity. Our technical staff will gladly cooperate with the management of any mill in developing efficient and economical methods of using liquid chlorine.

CAUSTIC SODA · ALUMINUM SULPHATE (PAPER MAKER'S ALUM, NATRONA POROUS ALUM, IRON-FREE ALUM) · PERCHLORON · PENCHLOR ACID-PROOF CEMENT · SODA ASH · SODIUM ALUMINATE · AMMONIA (ANHYDROUS AND AQUA) · BLEACHING POWDER

Chlorine

PENNSYLVANIA SALT MANUFACTURING COMPANY OF WASHINGTON
TACOMA, WASHINGTON

TRADE MARK

PENNSYLVANIA SALT
Chemicals

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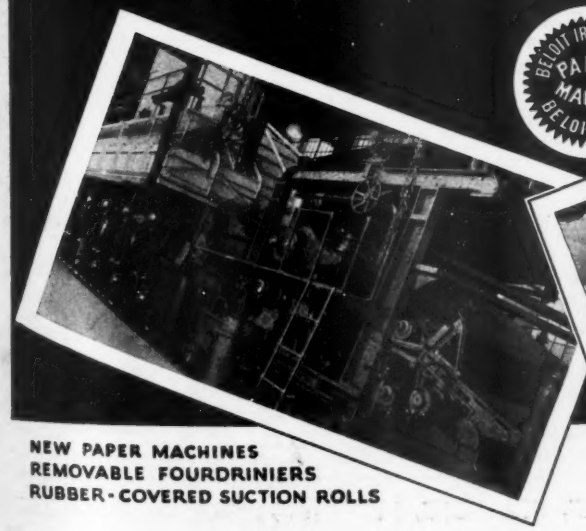
The PACIFIC COAST GOES BELOIT

MODERN BELOIT EQUIPMENT WILL BE FOUND IN PRACTICALLY EVERY MILL ON THE COAST

The Beloit Way is the Modern Way

BELOIT IRON WORKS PAPER MACHY BELOIT WIS



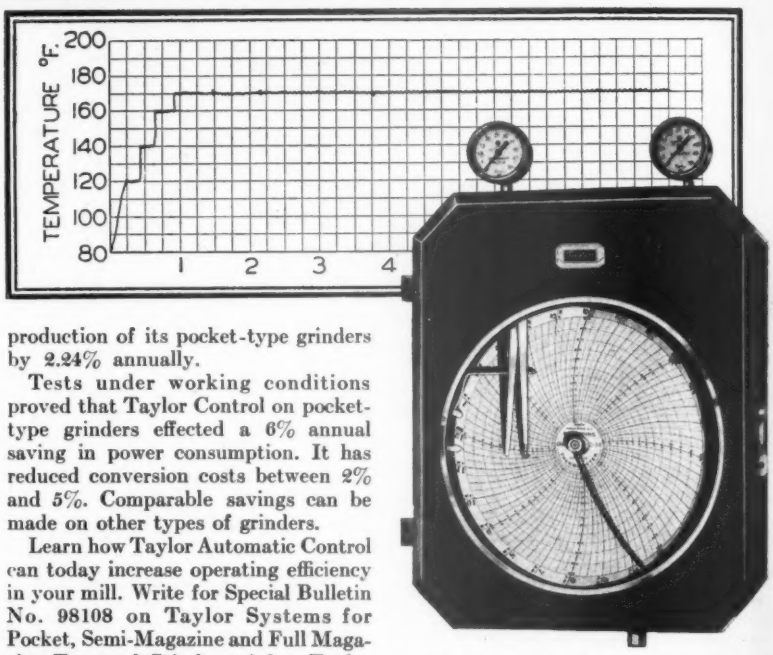
NEW PAPER MACHINES
REMOVABLE FOURDRINIERS
RUBBER-COVERED SUCTION ROLLS

CHAIN DRYER DRIVES
HIGH-SPEED SUPER SHAKES
ENCLOSED HYPOID OR SPIRAL BEVEL GEAR DRIVES

If Your Grinding Temperature

...RUNS WILD

IT'S TIME TO CALL ON A TAYLOR SYSTEM OF AUTOMATIC CONTROL TO HOLD GRINDING TEMPERATURE WITHIN A 2° F. VARIATION... AND CUT CONVERSION COSTS!



● The wavy line at the top shows temperature curve under manual control. The chart just above shows how Taylor Control can keep grinder temperature within close limits. The instrument is the Taylor Fulscope Recording Controller that is the heart of the Taylor System of Control. Install it in your mill and save money on production as you begin to produce finer and more uniform stock.

THE WAVY LINE at the top of the page is not a record of an earthquake. It simply shows the wild wavering of grinding temperature under manual control. It indicates that mill production is not as high as it should be, stock is not uniform in character, stone life is being shortened, and power consumption is higher than it should be.

No matter how experienced is the exercise of manual control of grinding temperature, there will be unavoidable variations that will be costly. In some mills fluctuations are 50-60° F. Records show variations of even 70-80° F. in a few minutes. Stock quality can not help but be affected. It cannot be uniform.

Taylor Control applied to the grinding operation corrects all of this automatically. It maintains a close, uniform control that makes it possible to operate as closely as possible to the critical temperature of stock and stone. It helps to produce the best quality of stock for every purpose, with the desired freeness, color and strength.

PRODUCTION INCREASED... POWER COSTS CUT

Taylor Control eliminates shelling and blistering of stone surfaces. It prevents stone fracturing... assures longer stone life. One mill installed Taylor Control of Grinder Temperature and increased the production of its pocket-type grinders by 2.24% annually.

Tests under working conditions proved that Taylor Control on pocket-type grinders effected a 6% annual saving in power consumption. It has reduced conversion costs between 2% and 5%. Comparable savings can be made on other types of grinders.

Learn how Taylor Automatic Control can today increase operating efficiency in your mill. Write for Special Bulletin No. 98108 on Taylor Systems for Pocket, Semi-Magazine and Full Magazine Types of Grinders. Ask a Taylor Representative or write to Taylor Instrument Companies, Rochester, N. Y. Plant also in Toronto, Canada. Manufacturers in Great Britain—Short & Mason, Ltd., London, England.

Pacific Coast Sales Offices—145 Mission St., San Francisco, Cal., and Central Bldg., Los Angeles. Also, Terminal Sales Bldg., Portland, Oregon. Complete repair facilities for all Taylor Instruments are available in San Francisco. For your protection, have adjustments or repairs to Taylor Instruments made by Taylor.

Taylor

Indicating · Recording · Controlling

TEMPERATURE, PRESSURE, FLOW *and* LEVEL INSTRUMENTS

10 YEARS AGO IN PACIFIC PULP & PAPER INDUSTRY

NOVEMBER-DECEMBER, 1927

LESS WASTE at Longview... Box Business on Toes... Two Oldsters Pass On... PULP Is Fat on First Birthday

Fibre from Fir:

"One more," remarked *Pulp* in the December issue, discussing new mills. Outstanding was Longview Fibre's

$3,000,000 kraft mill at Longview, Washington. Designed to pulp Douglas fir waste wood exclusively, it was constructed in the record time of nine months by putting up the auxiliary buildings and roads first and utilizing these in the major construction. The new mill was important to the community, for it helped in more complete utilization of the wood taken from the fore[illegible]

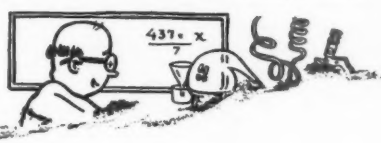
[illegible] wooden handle factories and other auxiliary industries. The new mill added a $300,000 payroll to the community.

Pulp:

Ended its first year with an 88-page issue—a full fledged journal, bulging with news of the Pacific Industry.

Practical Chem Curriculum:

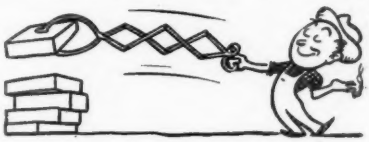
In '27 pulp men on the Coast knew they would need plenty of good men to fight production battles in succeeding decades. *Pulp* for November reported plans afoot for introducing practical chemistry, especially pulp and paper chemistry, into the high school curriculum in Washington. Professor Benson of U. of Washington pointed out to assembled high school chemistry instructors that pulp was the coming chemical industry of the Coast; probably many a good research man in today's mills



[illegible] 50-ton sulphate mill brought

Tumble to the Trade:

Pulp gave the Trade a big tumble in the year-end issues of 1927. And rightly, too. Business was booming



for enterprising jobbers. T. H. Doane, V. P. and G. M. of Pacific Coast Paper Co., was thinking of overhead problems: "Recently I estimated that a paper order passing through our house must be handl[illegible] three [illegible] red [illegible] nd [illegible] um- [illegible] the [illegible] s a [illegible] nip- [illegible] lp [illegible] he [illegible]

[illegible] deliveries [illegible] favorable factor is the greater ease with which the cartons can be handled."

Warner—
Earl Thompson suggests
that we cut short the ad. in
Pulp this month and just
wish everybody up north a
merry Christmas and a
Happy new year.
Jeff Smith

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Pacific PULP & PAPER Industry

The Journal of the Pacific Coast Industry

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Bellingham Construction Moves Ahead on Schedule

Puget Sound Pulp & Timber Company's 125 Tons Per Day Unbleached Sulphite Pulp Mill Will Be Completed in March

THE modern unbleached sulphite pulp mill of the Puget Sound Pulp & Timber Company under construction at Bellingham, Washington, is moving along on schedule according to Cavin, Marshall & Barr, consulting engineers supervising the construction.

On November 24th the new laboratory building was completed and put into operation by Superintendent Erik Ekholm. It includes all of the latest equipment for technical control for both the present operating unbleached sulphite pulp mill and the new mill which will be completed late in March.

● As of December 15th Engineer Harold D. Cavin reports that the wood cleaning building is completed and the installation of machinery consisting of the Stetson-Ross barkers, hand barkers, knot saws and conveyors, is now under way.

At this time the accumulator foundations are complete and the erection of the accumulator has started.

● The sulphur burner building is completed and the installation of the burners and combustion chambers is now in progress. The acid plant building is finished, the cooler pond and drain tile-lined. The G. D. Jenssen Company have finished the acid towers as will be noted in the cover photograph, taken December 2nd, and the tile lining of the towers by the Stebbins Engineering Corporation has begun. Acid storage tanks are all ready.

Foundations are in for the blow pits but the blow pits cannot be erected until the digester shells are assembled.

● Structural steel for the boiler house is up and the stack finished. Installation of the boilers has just been started.

The chipping plant building brickwork is completed and installation of the chippers, screens, chip crusher and conveyors is now in progress. The chip conveyor from the chipping plant to the digester building storage bins is complete as to steel framework and the sheathing is now being applied.

● Steel work for the digester building is all finished and the brickwork up to the second oor. Erection of the digesters is under way.

Likewise the steel work for the drying machine building is complete and the concrete oors are being poured preparatory to the arrival of the two Flakt dryers January 16th.

● The electric sub-station is done and the underground feeders and panels in various departments of the mill are being installed.

The hogged fuel storage building and enclosed wooden bin is now complete and the conveyors are being built for receiving and delivering the fuel.

● To house construction material as it arrived the mill stores and repair building was completed early in the program. This is a wooden structure with space for a modern machine shop which is at present in the process of installation.

A structural steel building with corrugated siding was built on the dock to be used for pulp storage. At present it is housing equipment as it arrives.

● Concrete foundations and tanks for the screen building have been poured and the tanks are now being tile lined.

The sulphur conveyor, of structural steel, for handling sulphur from the dock to the concrete storage silos is complete with the exception of the Merrick Weightometer installation which is to automatically weigh the sulphur as it comes from the ship into storage.

● Sulphur storage bins consist of four concrete tanks 20 feet in diameter and 40 feet high. These are complete as will be noted in the cover photograph with the exception of the conveying system for taking the sulphur from the bins to the burner room.

The completed wharf is 850 feet in length and 80 feet in width running parallel to the face of the mill site. It is equipped with adequate rail and water facilities for handling incoming and outgoing cargo. It is unique in that it is the first complete dock of any size to employ 100 per cent mineralized cell treated piling. It is now used for loading and unloading structural materials and machinery.

● Sewers 40 inches and 24 inches in diameter furnished by the National Tank & Pipe Company are installed and the underground water and fire system is partially completed.

Bellingham Approves Water Bond Issue

On December 4th the citizens of Bellingham, Washington, voted favorably on the proposal to issue bonds up to $750,000 for the improvements of the city's water system necessary to supply the Puget Sound Pulp & Timber Company's new pulp mill and to provide ample water for further expansion.

This was the only one out of nine proposals before the voters which was passed, the others being voted down.

Forestry Problems Discussed in Portland

Clarified Forest Service Policy Urged

Nearly 200 men representing private timber owners, federal, state and private forest agencies, met at Portland December 8-9-10 under the auspices of the Western Forestry and Conservation Association, for their annual forest policy conference.

Under the leadership of President G. F. Jewett, Forest Counsel E. T. Allen and Secretary-Treasurer C. S. Chapman, the group considered three broad classifications of subjects: forest practice, general cooperation and protection, and forest protection detail.

The meeting served as an arena where private timber owners entered the lists with officials of the forest service, and where state foresters aired their views of the policies of other forestry agencies. Practical lumbermen and those not connected with the federal services uttered sharp criticism of federal administration policies. Possible forest legislation was discussed and a program proposed.

In his opening address, President Jewett pointed out that the timber industry lacks confidence, largely because the national leadership has not been frank about its aims. He regretted that the Forest Service does not definitely state its policy and does not take industry into its confidence. He also deplored publicity emanating from Washington which implied that the forests were being ruthlessly devastated by the lumber and timber-using industries. The Department of Labor, he said, is responsible for much of the present labor trouble which is handicapping production. Mr. Jewett urged more cooperative effort among all those having to do with management and utilization of the forests.

Forest Service Favors Regulation

Possible federal regulation of all timber cutting came in for considerable discussion, the fear being expressed by private operators and state officials that drastic regulation by the federal government might be imposed by law or by extension of TVA projects. E. W. Tinker, assistant chief of the Forest Service, was asked to clarify the policy of the bureau in this connection. He told the group that the Forest Service favored federal regulation, but assured them that such regulation would be operated through state units, with local factors being taken into consideration in formulating rules.

The Clarke-McNary Act, under which the federal government contributes to the cost of fire protection, was commended by the conference, but it was proposed that appropriations be increased so that the work might be more effective, and further, that the law be amended so that distribution of funds be based on protection performance of the states instead of upon book figures set up in Washington. It was contended that under the present system the states which spend large sums in fire protection do not receive as large a percentage of the funds as those states which are not active in protection work. It was also suggested that the government should carry more than the present 25 per cent of protection costs, although Mr. Tinker said that the Forest Service favored this figure as the limit of federal participation.

Proposed Legislative Program

The legislative program proposed embraced four main points: an increase in the Clarke-McNary Act funds, a sustained yield policy law, federal forest acquisition and a forest credit law which would enable the government to aid the industry financially.

The control of forest insects and diseases held a prominent place on the program, and it was suggested that concerted effort should be made to make the public realize that these destroy more trees each year than fire and logging operations combined. A program of further research and active field work for the suppression of these destroyers was endorsed.

Administration of O & C Lands

Of particular importance to Oregon was the discussion of the administration of Oregon and California grant lands, which are now administered by the Department of Interior. These lands cover 18 counties in western Oregon, and much

PANORAMIC VIEW of the PUGET SOUND PULP & TIMBER COMPANY'S new unbleached sulphite pulp mill at Bellingham, Washington, which will be completed late in March, 1938 » » » In the center foreground appears the roof of the new laboratory building, completed November 24th.

of the prosperity of the state is dependent on proper procedure in administering them and adopting a practical plan of cutting off the timber. This subject was discussed by W. H. Horning of the National Park Service, who described the plan of the Department of Interior so far as it was available in detail. It is proposed that these lands will be given adequate fire protection and that the timber will be sold with full regard to good forest practices and future crops.

Forest Service Aims

The statements of Mr. Tinker of the Forest Service was of special interest to private timber operators who have wanted to know the position of the service on numerous matters. Mr. Tinker stated that, in general, the Forest Service believed in: 1. The encouragement of private forest management and the appropriation of more Clarke-McNary forest protection funds; 2. the policy that federal responsibility for fire protection should be limited to 25 per cent of the cost; 3. passage of a forest credit bill so that private owners can be assisted financially; 4 promotion of a program with the lumber industry in economic research and in study of equipment, logging methods, etc.; 5. federal regulation of forest management and cutting on all lands, to be worked out with timber operators and local officials. This regulation, he said on questioning, would probably be on the basis of state unit administration, based on local conditions, with federal guidance and a certain amount of control.

Other speakers, representing industry and the states, felt that the forest practices being worked out within the states are adequate, and favored putting these into state law rather than operate under regulations from Washington.

Asked how far such regulation would go, Mr. Tinker pointed to the southern pine pulp industry as an example. These operators, he said, plan to leave their land in productive condition. However, most of their pulpwood will come from farmers' land, and the operators recognize the futility of forest management when the farmers cannot do the same, and when small sawmills can come in and take trees down to eight or nine inches in diameter. He predicted that the southern states would form an interstate pact, with uniform cutting regulations for all, with the federal government working out this district compact and participating in control.

Talk Cooperation

One of the strong notes of the conference was the desire for closer cooperation between all forest agencies, and the working out of problems in meetings between timber operators, state, fire protection and federal agencies. A continuation of recently started conferences in forest service offices in each region was recommended.

Among resolutions adopted of interest to the pulp industry were those commending the research of the Pacific Northwest Forest Experiment station and the Forest Products laboratory at Madison, Wisconsin, and one endorsing the appropriation of adequate funds for future work of the Madison laboratory.

Paul Middlebrook Manager of Lebanon

Paul F. Middlebrook was recently appointed mill manager of the Lebanon, Oregon, mill of the Crown Zellerbach Corporation, succeeding Dan Dupuis.

Mr. Middlebrook has been with the company for many years in various capacities. He has been located at San Francisco, West Linn, Camas, and until his new appointment, served as assistant to vice-president George Berkey in the Portland office.

To Merge California-Oregon With Columbia River

The California-Oregon Paper Mills of Los Angeles will be merged with the Columbia River Paper Mills, under a plan now under the way to completion. It is believed that legal details will be finished by the end of the year.

The entire capital stock of the Los Angeles company is owned by Columbia River Paper Mills, consisting of 2,716.5 shares of eight per cent preferred, and 8,409 shares of common, both of $100 par value. It is understood that bonds of the company are to be assumed by Columbia River, security remaining the same. These are four per cent 20-year sinking fund bonds, issued in the past year, and constitute a mortgage upon the Los Angeles plant and Clark County timber holdings near Vancouver, Wash.

The sum of $300,000 was authorized and $261,175 was outstanding as of Dec. 31, 1936. At this time, accrued unpaid dividends on preferred stock amounted to $151,820. The company earned a profit in each of recent years, but lost $16,555 in 1936.

While the change wipes out accrued dividends, security holders' interests have not been prejudiced, inasmuch as the two companies will be one, and such earnings which might have gone to reduce the dividend arrears will accrue directly to the single company. It is expected to make possible certain economies and to save double taxation.

COMPARISON of this picture taken December 1st with the photograph in the October number taken October 1st will show the rapidity with which the new plant is being constructed » » » Cavin, Marshall & Barr are the engineers in charge.

Superintendents Hold Big Meeting in Seattle

Symposium on Machine Clothing Attracts Large Crowd

WITH a large crowd in attendance the annual fall meeting of the Pacific Coast Division of the American Pulp & Paper Mill Superintendent's Association was held at the New Washington Hotel in Seattle, December 3rd and 4th.

The Symposium on Machine Clothing and the usual interesting Round Table Discussion furnished those who attended with many ideas to take home and apply to their own mill operations.

● General Chairman Thomas J. Bannan started the meeting with the Pioneer Costume Party, Friday evening, December 3rd. At the suggestion of A. S. Quinn, chairman of the party, who had effectively publicized the event in advance, the guests were in costumes of the 1890s, for the theme of the meeting was the honoring of the pioneer superintendents of Pacific Coast pulp and paper mills. The best costumes were selected by three judges, Mrs. Ray Erchinger, A. D. "Dad" Wood, and Sam Salmonson, and the prizes awarded at the banquet Saturday evening.

Saturday morning the symposium on maching clothing opened by chairman Ray C. Onkels with the presentation of a paper entitled, "Some Factors Affecting the Life of Fourdrinier Wires," by Walter S. Hodges of Portland, representing the Appleton Wire Works on the Pacific Coast. Following Mr. Hodges, Arthur M. Mears offered a paper on "Felts and the Machine." Mr. Mears is manager of the Pacific Coast Supply Company, representatives of F. C. Huyck and Sons on the Pacific Coast.

● The third paper was given by R. T. Petrie, Pacific Coast representative of the Bagley & Sewall Company, who spoke on "What the Machine Builder Has Done to Improve the Life of Machine Clothing." Short discussions followed each paper.

All three papers making up the symposium on machine clothing appear in this issue.

Election of Officers

● Following the symposium Mr. Onkels called for nominations for the Pacific Coast Division's officers during 1938. L. S. McCurdy was elected chairman for the coming year, succeeding Mr. Onkels. Mr. McCurdy, who is paper mill superintendent of the National Paper Products Company's Port Townsend kraft paper and board mill, served as first vice-chairman this year.

● E. W. G. Cooper, assistant paper machines superintendent of the Crown Willamette Paper Company Division of the Crown Zellerbach Corporation at Camas, Washington, was elected first vice-chairman.

● Anton Seibers, paper mill superintendent of the Longview Fibre Company, Longview, Washington, was elected second vice-chairman of the Pacific Coast Division.

● A. S. Quinn, vice-president of the Stebbins Engineering Corporation of Seattle, was chosen as secretary-treasurer to succeed H. A. "Gob" Des Marais, of the General Dyestuff Corporation in Portland.

The meeting voted the Pacific Coast Division's appreciation to the retiring officers: Ray C. Onkels, chairman; L. S. McCurdy, first vice-chairman; James D. Fraser, second vice-chairman; and to H. A. Des Marais, secretary-treasurer. The Pacific Coast Division expressed its appreciation of the loyal service and fine work performed by Mr. Des Marais during the past four years he has served as secretary-treasurer. When the Pacific Coast Division of the American Pulp & Paper Mill Superintendent's Association was organized at a meeting in Seattle in the spring of 1933, Mr. Des Marais, himself a former superintendent, was selected to be secretary-treasurer. Each succeeding year resulted in his reelection at the insistence of the members who were familiar with his organizational ability. The closing of his work as an officer sees the Pacific Coast Division on a sound financial basis and active in promoting the education of operating men in Pacific Coast pulp and paper mills through the presentation of papers and the interchange of ideas in the Round Table Discussions.

● L. S. McCurdy, the new chairman of the Pacific Coast Division, is paper mill superintendent of the National Paper Products Company, Division of Crown Zellerbach Corporation at Port Townsend, Washington. Mr. McCurdy has been paper mill superintendent at Port Townsend since the mill first started producing in 1928. His work in the paper industry began when he was but

E. W. G. COOPER
Elected First Vice-Chairman

L. S. McCURDY
CHAIRMAN

ANTON SEIBERS
Elected Second Vice-Chairman

14, with the Combined Locks Pulp & Paper Company. He remained with Combined Locks for more than six years. Later Mr. McCurdy worked in the mills of the Wisconsin River Pulp & Paper Company at Stevens Point, Wisconsin, and the Dells Paper Company of Thorold, Ontario.

From the latter mill he moved to the Kalamazoo Vegetable Parchment Company as machine room superintendent. He next became assistant superintendent for the International Paper Company at Niagara Falls, New York. His work then took him to Havana, Cuba, where he stayed for five years as general superintendent of the Paperlera Cubana. Returning to the United States Mr. McCurdy became superintendent for the Albemarle Paper Company of Richmond, Virginia. The next move was to Port Townsend.

Mr. Cooper, who was elected first vice-chairman, is assistant paper machines superintendent for the Crown Zellerbach Corporation mill at Camas, Washington. He has been with the Camas mill since January, 1931. At present Mr. Cooper is in charge of the paper machines as H. E. Ostenson, paper machines superintendent, is absent on sick leave.

His record in the paper industry in England, Canada and the United States, as given in the World's Paper Trade Review, is most interesting. We quote this publication:

"An interesting record in the paper mills of Great Britain and the U. S. A. stands to the credit of Mr. E. W. G. Cooper. He began his career with Green & Sons, Tovil, Maidstone, England, manufacturing rag tissues and decorative specialties, greeting card stock, etc., at the age of 13), remaining until he was 16 years old, when he proceeded to the neighboring mill of A. E. Reed & Company, staying until the outbreak of war in 1914. Mr. Cooper joined the Queen's own Royal West Kent Regiment, seeing active service in the Dardanelles, Egypt and Palestine. After the Armistice he remained in the east another year with the war graves commission.

"Coming home at the end of 1919 Mr. Cooper returned to A. E. Reed & Company until 1922 when he was offered opportunities for wider experience which opened up at the Dartford mill with P. G. Goedney and W. C. Warnell who had come down from Aberdeen to take charge of the mills for the late Lord Burnham, and when a scheme of reconstruction was undertaken Mr. Cooper was called in to assist. This scheme invoked the reconstruction of the plant from news to fine papers and today this mill is noted for its fine range of bonds, waxing, greaseproofing and glasine.

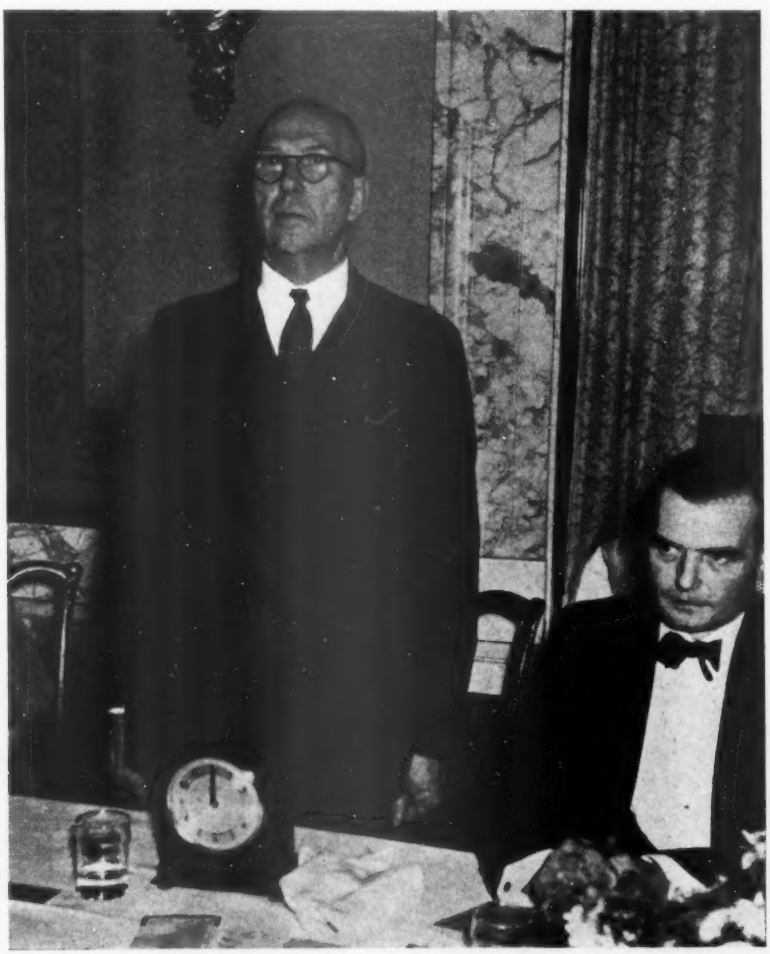
"When the change-over was successfully accomplished Mr. Cooper went to Birmingham to start a mill for Southall Bros. & Barclay, Ltd., who were undertaking the manufacture of craped tissue and surgical specialties. These machines were reconstructed for increased adaptability and production by Mr. Cooper, and one of the most important features of this machine developed by Mr. Cooper was extracting water at 3 points on a central roll which served as the top couch top press and pressure roll for M. G. dryers—a similar feature to that of the Dual Press now built by Beloit Iron Works. During this period Mr. Cooper graduated from the London and city guilds in paper technology.

"Having got the mill running nicely Mr. Cooper looked for new worlds to conquer. These he visualized across the Atlantic. An outlet for his energy was offered by the Anglo-Newfoundland Development Company at Grand Falls, Newfoundland. It was while he was thus engaged that he was recommended by Mr. Samuel Milne to the Canada Paper Company, Windsor Mills, Quebec, as the man they needed to develop specialties, superintend the mill and the installation of a new type of machine supplied by Bertrams, Ltd., Edinburgh. This was a combination machine designed to make book and label and kraft specialties M. G. or M. E. with marking rolls in standard dryer section for M. F. papers and on the Yankee dryer for M. G. papers.

"Having completed his task with the Canada Paper Company Mr. Cooper by this time had built up a reputation for himself for solving difficult problems and found himself to be in demand by many eastern mills. The Don Valley Paper Mill changed ownership, the mill was run down. Mr. Cooper was invited to join them as their superintendent, the particular purpose being to supervise a program of reconstruction and the many changes made resulted in increased production and quality, also the development of new grades.

"For a similar purpose he was recommended to Racquet River Paper Company in capacity of development engineer, and to several other mills until he came West in January, 1931, having accepted an offer with the Crown Willamette Paper Cmopany at Camas, Washington, now a division of the Crown Zellerbach Corporation. Also, we might add, Mr. Cooper is a member of the British Technical Association, American Pulp and Paper Mill Superintendents' Association, also of TAPPI. He is on the manufacturing committee of TAPPI and has made several contributions that have called forth much comment and appreciation, including "The Efficient Drying of Paper, 1929"; and "The Cause and Cure of Grainy Edges, Curl and Cockle in Paper, 1937."

• Anton Seibers, elected second vice-chairman, is paper mill superintendent for the Longview Fibre Company. Mr. Seibers began his paper mill career in 1914, when he went to work for the



TOM BEAUNE, oldest Superintendent in point of service on the Pacific Coast, acknowledges the electric clock presented by the Pacific Coast Division of the Superintendent's Association as a token of their esteem » » » Retiring Chairman RAY C. ONKELS seated at the right.

Thilmany Pulp & Paper Company at Kaukauna, Wisconsin.

When called to the new kraft paper and board mill of the Longview Fibre Company in 1928, Mr. Seibers had risen to be machine tender at Kaukauna. He came to Longview Fibre as assistant paper mill superintendent. Six months later he was made paper mill superintendent.

● A. S. Quinn, came to the Pacific Coast in 1930 as manager of the Stebbins Engineering & Manufacturing Company's operations. This past month he was elected a vice-president of the newly formed subsidiary company, Stebbins Engineering Corporation of Washington. Mr. Quinn has been active in both the Superintendent's association and in TAPPI, serving two terms as secretary-treasurer of the Pacific Section of TAPPI.

Saturday Luncheon

● At noon Saturday the ladies joined the men at luncheon to hear Colonel Abbott Boone, executive officer of the fourth reserve district of the United States Army talk on "World Affairs from a Military Aspect." Colonel Boone is well known as an interesting, well -nformed speaker on military problems. Ray C. Onkels, chairman of the Pacific Coast Division, introduced Thomas J. Bannan, who in turn introduced Colonel Boone. At the speaker's table were Mr. and Mrs. Ray C. Onkels, Mr. and Mrs. L. S. McCurdy Colonel Boone and Thomas J. Bannan.

The Discussion

● In the afternoon Charman Onkels called the Round Table Discussion to order and turned it over to Mr. McCurdy, who began by reading the questions turned in before the meeting. Approximately 60 men attended the discussion, which lasted for more than two hours. At the end the feeling seemed to be general that this was one of the best discussions held to date by the Pacific Coast Division.

Reception for Mr. and Mrs. Tom Beaune

● Before the banquet a reception was held in honor of the pioneer superintendents. Thomas H. Beaune, who prefers to be called Tom Beaune, has the longest record of continuous service in a Pacific Coast mill. Mr. Beaune is pulp mill superintendent for Fibreboard Products, Incorporated, at Port Angeles.

Mrs. Beaune accompanied her husband to the meeting, and they were the honor guests at the reception and later at the banquet. Mr. Beaune has been superintendent of a Pacific Coast mill continuously since March 10th, 1900, when he came from Northern New York to Floriston, California, to complete and start up the new sulphite mill. At that time Mr. Beaune was in the employ of the Stebbins Engineering and Manufacturing Company, who had charge of putting the mill into operation.

● Shortly after the Floriston mill began producing the pulp mill operation was turned over to Mr. Beaune, and he remained in charge for three years.

Starting the sulphite mill at Floriston must have been a tough job, for Mr. Beaune didn't have another man besides himself who had ever seen a sulphite mill. There were no cooks nor acid makers available around Floriston. When it came time to start with the green crew Mr. Beaune worked straight through four days and three nights, and for two months after that slept at the mill so he could be wakened whenever his help was needed. This wakening went on every night and at all hours. The cook would wake him up to ask if it was time to blow a digester, or the acid maker would get worried about acid strength, or a felt would be half off the machine.

● When he was but 13, Mr. Beaune started work in a pulp mill and began to cook when he was 18 years old. Nights off he studied and went to business college.

After three years at Floriston, Mr. Beaune was transferred to Oregon City when he had charge of the mill there. He was also superintendent at Camas, Warrendale and Ocean Falls, British Columbia, going to Port Angeles in 1920 where he has remained ever since.

The Banquet

● At the speaker's table were Mr. and Mrs. Ray C. Onkels, Mr. and Mrs. L. S. McCurdy, Mr. and Mrs. Tom H. Beaune, Mr. and Mrs. A. S. Quinn, and Anton Seibers.

General meeting chairman Thomas J. Bannan introduced Viv Vivian, who led the competitive singing between the tables. Competition was keen, for one hundred and sixty-three were in attendance.

● Mr. Onkels, as retiring chairman of the Pacific Coast Division, introduced the new officers who were present. Mr. Onkels also expressed the deep appreciation for their fine work in staging this successful meeting. In closing, he said that he had enjoyed his term as chairman, and knew that his successor, L. S. McCurdy, would do an excellent job and would get as much enjoyment of the work as he had obtained. Al S. Quinn was introduced as the master of ceremonies.

On behalf of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents' Association, Mr. Quinn congratulated Tom Beaune on his long record of continuous service to the industry on the Pacific Coast. As a token of the esteem in which he is held by the other superintendents, an electric clock was presented to him by Mr. Quinn.

In accepting the gift he expressed his deep appreciation of the honor bestowed by his fellow superintendents.

RAY C. ONKELS
Retiring Chairman

A. S. QUINN
Elected Secretary-Treasurer

Prize Winners

Speculation had been rising as to the winners of the costume party prizes at the Friday evening, as the judges refused to divulge their selections until the banquet Saturday evening. Mr. Quinn announced that the judges, Mrs. Ray Erchinger, A. D. "Dad" Wood, and Sam Salmonson had made the following selections:

● The best dressed couple, Mr. and Mrs. Brian Shera, of Tacoma; funniest dressed couple, Mr. and Mrs. Joseph W. Peckham, of Seattle; best dressed lady, Mrs. R. T. Petrie, of Portland; best dressed gentleman, William R. Gibson, of Seattle.

Mr. and Mrs. Shera received as their

JAMES D. FRASER
Retiring Second Vice-Chairman

prize a large scales; Mrs. and Mrs. Peckham a cocktail shaker; Mrs. Petrie a Toastmaster and tray; Mr. Gibson a lead vase and a merchandise certificate.

● As each registration carried a number, other prizes were awarded by a drawing. Mrs. Beaune drew the numbers and Mr. Quinn announced the lucky winners.

The Ladies Program

● The ladies' committee, headed by **Mrs. Earl G. Thompson,** met the ladies from out of town as they registered at the hotel, bade them welcome, and arranged for flowers in their rooms. As most of the ladies desired to do some Christmas shopping, the program planned by Mrs. Thompson's committee was arranged to fit in with the shopping expeditions.

An informal tea was held Saturday afternoon at the hotel and was enjoyed by a large number of the ladies present at the meeting.

● In addition to Mrs. Thompson, those on the committee were: **Mrs. W. L. Raymond, Mrs. M. B. Houston, Mrs. L. S. Burdon, Mrs. G. S. Brazeau, Mrs. A. W. Akers, Mrs. J. F. Brinkley, Mrs. B. A. Bannan, Mrs. A. S. Quinn, Mrs. Ferdinand Schmitz, Jr., and Mrs. H. M. Scott.**

The Retiring Officers

● During the past year the Pacific Coast Division of the American Pulp & Paper Mill Superintendts' Association has carried forward its work and increased its membership under the leadership of the following officers:

Ray C. Onkels, chairman, is superintendent of the Westminster Paper Company, Limited, of New Westminster, British Columbia. L. S. McCurdy, who is chairman for 1938, was first vice-chairman this past year.

● James D. Fraser, who was second vice-chairman this past year, is superintendent of the Pulp Division Weyerhaeuser Timber Company, Everett, Washington. H. A. Des Marais, who is retiring after four years as secretary-treasurer, is representative for the General Dyestuff Corporation, with headquarters in Portland.

●

AT THE COSTUME PARTY

The Friday evening Pioneer Days costume party produced a great variety of costumes of the "Gay Nineties" » » »

THOMAS J. BANNAN, General Chairman of the meeting, appears disguised in No. 1.

The judges of the costumes, Mrs. RAY ERCHINGER, A. D. "DAD" WOOD, and SAM SALMONSON, chose Mr. and Mrs. J. W. PECKHAM (No. 2), as the funniest couple » » » Mr. and Mrs. A. S. VIGER of Shelton appear in No. 3.

The prize for the best dressed couple went to Mr. and Mrs. BRIAN SHERA of Tacoma (No. 4) » » » Mrs. R. T. PETRIE, who is pictured with Mr. PETRIE in No. 5, was selected as the best dressed lady » » » WILLIAM R. GIBSON, with Mrs. GIBSON in picture No. 6, was chosen as the best dressed man.

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Appreciation

● General meeting chairman Thomas J. Bannan personally thanked all who worked with him in arranging for and carrying through this latest of the Pacific Coast Division's successful meetings. Mr. Bannan's general committee included:

A. D. Wood, superintendent of the Shaffer Pulp Company, Tacoma; **W. T. Webster,** general superintendent of the St. Regis Kraft Company, Tacoma; **L. P. Fortier,** general superintendent of the Everett Pulp & Paper Company, Everett; **G. J. Armbruster,** general superintendent of the Soundview Pulp Company, Everett; **James P. V. Fagan,** manager of the Puget Sound Pulp & Timber Company, Anacortes; **Tom H. Beaune,** pulp mill superintendent of Fibreboard Products, Incorporated, Port Angeles: **Leon Dupuis,** superintendent of the Washington Pulp & Paper Corporation Division of Crown Zellerbach Corporation, Port Angeles; and **George Cropper,** assistant manager Rayonier Incorporated, Shelton.

Mr. Bannan also expressed his appreciation to Earl G. Thompson, who had charge of the registration; to A. S. Quinn, who staged the Pioneer Costume Party, Friday evening, and who was master of ceremonies Saturday evening; and to the following Seattle business firms who cooperated by furnishing the many fine prizes:

The following Seattle companies contributed prizes: Allis-Chalmers Manufacturing Company, Cragin & Company, Doran Company, Electric Steel Foundry Company.

Fairbanks, Morse & Company, Generl Dyestuff Corporation, General Electric Company, Northwest Lead Company, Ohio Knife Company.

Pacific Car & Foundry Company, Pennsylvania Salt Manufacturing Company of Washington, Puget Sound Machinery Depot, Puget Sound Sheet Metal Works.

Schwabacher Hardware Company, Seattle Hardware Company, Stebbins Engineering Corporation, Stetson-Ross Machine Company.

Webster Brinkley Company, Western Steel Casting Company, Westinghouse Electric & Manufacturing Company.

THOMAS J. BANNAN
Chairman of the Meeting

General chairman **Thomas J. Bannan** has been active in business in the Pacific Northwest since 1929. As vice-president of the Western Gear Works of Seattle and of the parent company, the Pacific Gear & Tool Works of San Francisco. Mr. Bannan has a wide circle of friends in the pulp and paper industry. He is also a director of the Pacific National Bank of Seattle, and has served as chairman of the industrial committee of the Seattle Chamber of Commerce.

The following registered at the Seattle meeting:

Tole Ahlen, Svenska Flaktfabriken, Stockholm, Sweden; **Mr. and Mrs. Niles M. Anderson,** St. Regis Kraft Co., Tacoma; **Mr. and Mrs. Leonard Atwood,** Rayonier Inc., Shelton Division, Shelton; **Mr. and Mrs. Berk Bannan,** Western Gear Works, Seattle; **Thomas J. Bannan,** Western Gear Works, Seattle.

Mr. and Mrs. T. H. Beaune, Fibreboard Products, Inc.,, Port Angeles; **Mr. and Mrs. C. H. Belvin,** Chromium Corp. of America, Portland; **A. L. Bibbins,** Electric Steel Foundry Co., Seattle; **Mr. and Mrs. James Brinkley,** James Brinkley Co., Seattle.

Mr. and Mrs. J. E. Brown, Pacific Pulp & Paper Industry, Portland; **Mr. and Mrs. H. D. Cavin,** Puget Sound Pulp & Timber Co., Bellingham; **Mr. and Mrs. John M. Carlson,** Soundview Pulp Co., Everett; **R. S. Carey,** National Aniline & Chemical Co., Portland; **Dan Charles,** Knox Woolen Mills, Seattle; **J. J. Davis,** Electric Steel Foundry Co., Seattle; **R. E. Drane,** St. Helens Pulp & Paper Co., St. Helens; **Mr. and Mrs. A. C. Duncan,** Hercules Powder Co., Portland.

Mr. and Mrs. E. Ekholm, Puget Sound Pulp & Timber Co., Bellingham; **Mr. and Mrs. Ray Erchinger,** Doran Co., Seattle; **Mr. and Mrs. Lester T. Graham,** Link Belt Co., Seattle; **J. I. Fitch,** Everett Pulp & Paper Co., Everett; **Frank Frothingham,** Bird Machine Co., Chicago; **Mr. and Mrs. N. O. Galteland,** St. Regis Kraft Co., Tacoma.

Mr. and Mrs. Irving R. Gard, Merrick Scale Mfg. Co., Seattle; **Mr. and Mrs. B. R. Gardner,** Pennsylvania Salt Mfg. Co., Tacoma; **Mr. and Mrs. W. R. Gibson,** Northwest Filter Co., Seattle; **A. Gustin,** Rayonier Inc., Grays Harbor Div., Hoquiam; **Mr. and Mrs. Kenneth B. Hall,** Improved Paper Machinery Co., Portland; **G. W. Hardaker,** Sinclair Co., Holyoke, Mass.

John E. Hassler, Coast Mfg. & Sales Co., Portland; **Mr. and Mrs. H. A. Hauff,** Pulp Division, Weyerhaeuser Timber Co., Longview; **Mr. and Mrs. Lee Hill,** Pulp Division, Weyerhaeuser Timber Co., Everett; **Mr. and Mrs. Walter S. Hodges,** Appleton Wire Works, Inc., Portland; **H. M. Jones,** The Ohio Knife Co., Seattle.

Mr. and Mrs. M. C. Kaphingst, Rayonier Inc., Shelton Division, Shelton; **J. D. Kaster,** Oregon Pulp & Paper Co., Salem; **Mr. and Mrs. W. A. Kelly,** Waterbury Felt Co., Portland; **Mr. and Mrs. E. E. Kertz,** John W. Bolton & Sons, Inc., Portland; **F. A. Klass,** I. F. Laucks Co, Seattle; **J. C. Lane,** Northwest Lead Co., Seattle.

Norman Lewthwaite, National Paper Products Co., Port Townsend; **Mr. and Mrs. A. H. Lundberg,** G. D. Jensen Co., Seattle; **J. Luckey,** Garlock Packing Co., Seattle; **Mr. and Mrs. J. H. McCarthy,** Soundview Pulp Co., Everett.

Mr. and Mrs. L. S. McCurdy, National Paper Products Co., Port Townsend; **Geo. H. McGregor,** Pulp Division, Weyerhaeuser Timber Co., Longview; **Mr. and Mrs. F. W. McKenzie,** Webster Brinkley Co., Seattle; **Mr. and Mrs. W. A. McKenzie,** Rayonier Inc., Port Angeles Division, Port Angeles; **A. M. Mears,** Pacific Coast Supply Co., Portland; **Mr. and Mrs. Ned Menzies,** W. S. Tyler Co., Seattle.

G. E. Mitchell, Hesse Ersted Iron Works, Portland; **Mr. and Mrs. T. E. Moffitt,** Hooker Electrochemical Co., Tacoma; **Mr. and Mrs. D. C. Morris,** James Brinkley Co., Seattle; **Mr. and Mrs. W. C. Morrison,** Portland; **L. S. Nagle,** Hyatt Roller Bearing Co., San Francisco.

R. S. Niccolls, Columbia Steel Co., Seattle; **Mr. and Mrs. Fred Nicholson,** Stetson-Ross Machine Co., Seattle; **S. Norman,** General Iron & Steel Works, Portland; **Mr. and Mrs. M. E. Norwood,** Columbia River Paper Co., Vancouver, Wash.; **J. C. Nunn,** Western Steel Casting Co., Seattle.

Mr. and Mrs. R. C. Onkels, New Westminster Paper Co., New Westminster, B. C.; **James Osborne,** General Chemical Co., Portland; **Mr. and Mrs. Wm. Osborne,** Hooker Electrochemical Co., Tacoma; **Mr. and Mrs. C. D. Parker,** The Fafnir Bearing Co., Seattle; **Mr. and J. W. Peckham,** Bristol Co., Seattle; **Mr. and Mrs. R. T. Petrie,** Bagley & Sewall Co., Portland.

Mr. and Mrs. Albert S. Quinn, Stebbins Engineering Corp.. Seattle; **H. H. Richardson,** Electric Steel Foundry, Portland; **Ed. F. Riley,** Palmer Supply Co., Seattle; **Fred Reilley,** Powell River Co., Powell River, B. C.; **H. B. Reilly,** St. Regis Kraft Co., Tacoma; **Carl Robert Sahlberg,** Skonvik, Sundsvale, Sweden.

Mr. and Mrs. S. A. Salmonson, Soundview Pulp Co., Everett; **W. A. Salmonson,** Coast Mfg. & Sales Co., Portland; **Mr. and Mrs. Fredie Schmitz,** Pacific Car & Foundry Co., Seattle; **Mr. and Mrs. Harlan Scott,** Pacific Pulp & Paper Industry, Seattle; **Mr. and Mrs. Chas. M. Server,** Appleton Woolen Mills, Portland; **Mr. and Mrs. Fred Shaneman,** Pennsylvania Salt Mfg. Co., Tacoma.

A. Siebers, Longview Fibre Co., Longview; **J. M. Shedd,** Everett Pulp & Paper Co., Everett; **Mr. and Mrs. Brian Shera,** Pennsylvania Salt Mfg. Co., Tacoma;

H. A. DES MARAIS
Retiring Secretary-Treasurer

Mr. and **Mrs. Carl Sholdebrand,** Hawley Pulp & Paper Co., Oregon City; **C. V. Smith,** St. Helens Pulp & Paper Co., St. Helens; **Mr. and Mrs. L. K. Smith,** Pacific Pulp & Paper Industry, Seattle.

Ray Smythe, Portland; **E. G. Sundfelt,** Sundfelt Equipment Co., Seattle; **Mr. and Mrs. Earl G. Thompson,** Great Western Electro-Chemical Co., Seattle; **E. H. Tidland,** Pacific Coast Supply Co., Portland; **Cecil Triplett,** Hawley Pulp & Paper Co., Oregon City; **R. M. True,** General Dyestuffs Corp., Portland.

Mr. and Mrs. A. S. Viger, Rayonier Inc., Shelton Division, Shelton; **Mr. and Mrs. L. H. Wear,** Taylor Instrument Co., Portland; **Ed. Weber,** Oregon Pulp & Paper Co., Salem; **W. T. Webster,** St. Regis Kraft Co., Tacoma; **Mr. and Mrs. J. W. Wilcox,** St. Regis Kraft Co., Tacoma; **Mr. and Mrs. Bill Williamson,** Shuler & Benninghofen, Portland.

Z. A. Wise, Griffiths Rubber Mills, Portland; **A. D. Wood,** Shaffer Pulp Co., Tacoma; **Edward P. Wood,** Pulp Division, Weyerhaeuser Timber Co., Longview; **A. Zimmerman,** Pacific Straw Paper & Board Co., Longview.

"Gob" Des Marais Has New Superintendent

Another dyestuff man reached the Pacific Coast at 3:06 p.m. on Sunday, December 5th, when Hubert Alexander Des Marais III arrived in Portland. The new addition to the General Dyestuff Corporation staff entered the ring at eight pounds and is still gaining nicely, making an early bid to follow his father's footsteps in the boxing arena.

The proud parents, Mr. and Mrs. H. A. "Gob" Des Marais, have two other children, both girls. "Gob's" rich voice was seriously missed at the superintendent's association meeting in Seattle, December 3 and 4, but his absence was forgiven when it was learned he remained at home to practice lullabies.

Troy Carey N. W. Fibreboard Sales Manager

Troy Carey was recently advanced from sales representative to sales manager of the Northwest Division of Fibreboard Products, Incorporated with headquarters in Seattle.

Mr. Carey succeeds H. A. Campbell who was transferred to the Central Division headquarters of Fibreboard in San Francisco.

Strange Makes Visit to States

Martin Strange, sulphite superintendent of Pacific Mills, Limited at Ocean Falls, British Columbia, visited Crown Zellerbach mills in Oregon and Washington for several weeks during November.

Mrs. Strange accompanied her husband south going on to California for a visit before returning to Ocean Falls.

Rayonier Stock Admitted to Exchange

The common and preferred stock issues of Rayonier Incorporated, were admitted to trading on the San Francisco Stock Exchange December 9th.

Going on the board that day were common shares of $1 par value amounting to 1,590,078 shares, and the $2 cumulative preferred stock, $25 par value, in the amount of 626,206 shares.

Portland Tappi Dinner to Discuss Heat

Moving Picture "Heat and Its Control" Will be a feature of January 11th meeting

The next dinner meeting to be held by the Pacific Section of TAPPI will be at the Heathman Hotel in Portland, Oregon, Tuesday evening January 11th at 6 p.m. according to an announcement by N. W. Coster, vice-chairman of the Pacific Section and in charge of programs.

The program will include a sound moving picture, "Heat and Its Control," presented by Johns-Manville, with C. E. Weinland in charge.

Following the picture a symposium and discussion on the subjest, "Heat Requirements for Drying Pulp" will be led by A. H. Lundberg of Seattle.

Kenneth B. Hall is chairman in charge of the meeting and reservations should be addressed to him at 219 Pittock Building, Portland, Oregon.

Hyer and Crawford Visit Coast Mills

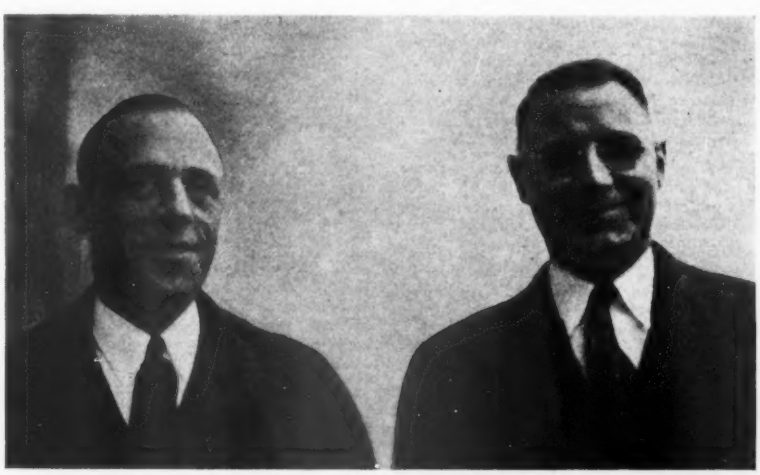
Allan Hyer, sales manager of the Black-Clawson Company, Hamilton, Ohio, and Cliff R. Crawford, chief engineer of the Shartle Brothers Machine Company of Middletown, Ohio, subsidiary of the Black-Clawson Company, spent about a month during November and December on the Pacific Coast calling upon almost every pulp and paper mill.

Both Mr. Hyer and Mr. Crawford were impressed with the progress made by the industry in this region and expressed their appreciation for the friendly reception given them at all of the mills.

While in Los Angeles, they inspected the near board and roofing mill of the Pioneer Division of the Flintkote Company, for which Black-Clawson and Shartles furnished the board machine and all the stock preparatory equipment.

This particular mill has created much interest on the Pacific Coast by reason of its use of many new features on the Black-Clawson board machine, it also being the first beaterless board mill on the Coast. It is our understanding that the Shartle Tug Boat Annies and Barnacle Bills are used in place of beaters.

Later, they drove north in order to check up on the extremely high tonnages (51 lbs. per square foot of drying surface)—being obtained from the Black Cawson vertical pulp drying machines in various mills located throughout the northwest, and in particular on the new Black-Clawson pulp dryer which began operations early this summer in the Rayonier Incorporated, Shelton Division.



ALLAN HYER, Sales Manager of the BLACK-CLAWSON Company and CLIFF R. CRAWFORD, Chief Engineer of the SHARTLE BROTHERS MACHINE Company spent more than four weeks during November and December visiting almost every mill from southern California to Canada along the Pacific Coast.

Changes Voted in British Columbia Forest Act

Provincial assembly adopts stringent protective measures to perpetuate forests

● British Columbia's legislators put through drastic legislation at its present session for the protection and perpetuation of forests. Action was a direct sequel to the appearance of Chief Forester E. C. Manning before the forestry committee. Mr. Manning said that some loggers were not doing their part in conservation work and that the forests were threatened with depletion unless prompt measures were taken.

In brief, the Forest Act amendments provide for a substantial increase in funds to be used for protecting forests, and set up a system of heavy penalties for logging operators who fail to observe the wishes of the forest service in the disposal of slash on cut-over lands, so as to leave them unproductive.

● The government will increase its contribution to the forest protection fund by $40,000, and the timber industry will be taxed four cents an acre instead of 3 1/3 cents, making an increased contribution of $20,000. This gross increase will bring the total funds to $570,000.

For each acre of ground on which he fails to burn his slash, in accordance with government regulations, the logger must pay a fine of $5. The forest service reserves the right to exempt any area when it is considered inadvisable or impossible to burn the slash. The fines will go to the protection fund.

Another Amendment Considered

● To prevent the use of valuable pulpwood as lumber, the British Columbia government is considering an amendment to the Forest Act preventing the private sale of timber on pulp licenses to sawlog operators.

Authority is also being sought by Wells Gray, minister of lands, for the re-seeding of crown-granted timber lands. Under the new legislation the forest service will be able to enforce regulations on these lands to compel timber operators to leave an adequate supply of seed trees which, after logging, will seed the surrounding land.

Woodfibre Ready In January

A window-less building is being erected at Woodfibre to house the new equipment now being installed by the British Columbia Pulp & Paper Co. in connection with conversion of the plant to the manufacture of bleached sulphite pulp.

President Lawrence Killam says that it is hoped to have the job completed at Woodfibre by the end of January, with production following shortly afterwards. The Swedish fan dryers are expected to be in operation by February or March.

Lack of windows is necessary because of the importance of maintaining the same degree of light at all times in the manufacture of bleached sulphite.

"The slightest variation in light makes a pronounced difference in the human eye's sense of coloration," explained Charles Benthall, manager of Dominion Construction Company, Vancouver, which is building the plant under contract. "For that reason precautions have been taken to prevent any light other than artificial from entering the building."

All new construction at the Port Alice plant of B. C. Pulp & Paper Company has been completed. Most of the changes there were in connection with the digester and the chemical laboratory, which is now regarded as among the best equipped on the Coast.

Mr. Killam reports that the pulp market has experienced a slump during the past month, with sales to the Orient and several other countries falling off perceptibly. The long-term prospects, however, are regarded favorably.

Bates Valve Bag To Manufacture In B. C.

Bates Valve Bag Company of New York will enter the British Columbia field early next year and is now building in Vancouver a one-story concrete structure to house equipment that will be brought in during January.

None of the Bates officials are now in Vancouver and it is understood that work now in progress is under the supervision of the Seattle office. Heavy-duty bags for packing lime and cement will be manufactured.

McCarter & Nairne are the architects, and Wilkinson & Company general contractors, with Frederick Davies in charge of construction. Cost of the building is about $20,000.

Bates Inspects Coast Pulp Mills

Dr. John S. Bates, technical director of Price & Pierce, Limited, of London, pulp and lumber brokers, called on a number of Pacific Coast pulp mills in November following his attendance at the Fall Meeting of TAPPI in Savannah, Georgia.

Laing Elected Powell River Director

George F. Laing, Vancouver banker who recently retired as manager of the Vancouver branch of the Bank of Montreal, has joined the board of directors of Powell River Company.

Mr. Laing will fill the vacancy created by the death of Anson S. Brooks, chairman of the board.

Announcement of Mr. Laing's election was made by President S. D. Brooks. "The company feels by reason of Mr. Laing's long connection with financial and business conditions in British Columbia he will be a valuable acquistion to its board," said Mr. Brooks.

Oliver Greenwalt Killed While Hunting

Oliver Greenwalt, night superintendent of Rayonier Incorporated, Shelton Division, was accidentally killed by his own gun while hunting November 13th.

When he failed to return from a duck hunting trip alone, searching parties left Shelton to look for him finally finding his body alongside his boat on the tideflats at the mouth of the Hamma Hamma River on Hood Canal.

Mr. Greenwalt had apparently stepped out of his boat dragging the shotgun behind him. The trigger caught on the edge discharging the gun and fatally wounding him under the arm. He is survived by his widow.

William R. Gibson Acquires Shibley Company

William R. Gibson announced early in December his purchase of the assets of the Shibley Company, Incorporated and the formation of a new company called the Northwest Filter Company.

The organization will remain the same and the headquarters will continue at 1201 Textile Tower in Seattle.

Mr. Gibson became associated with the Shibley Company in the spring of 1935 and for a year devoted his time to research and development work in connection with water purification. Upon the death of Mr. Shibley this past May, Mr. Gibson became manager of the Shibley Company.

The new company will retain the consulting services of Paul F. Bovard of the California Filter Company of San Francisco, a recognized authority on the more difficult phases of water purification.

Prior to his association with Mr. Shibley in 1935, Mr. Gibson was for a number of years connected with the Washington Pulp & Paper Corporation and the Rainier Pulp & Paper Company in an engineering capacity.

His water engineering experience extends back to war time when he was a captain in the Royal Engineers of the British Army. Mr. Gibson was attached to the engineering corp in the Holy Land and superintended the construction of nearly a hundred miles of pipeline carrying water from the Nile to the British Army advancing on Palestine.

The Northwest Filter Company will continue representation of the following companies: Bristol Company, Builders Iron Foundry, Calgon, Incorporated, Hagan Corporation, Hall Laboratories, Incorporated, Iowa Valve Company, The Buromin Company, and Wallace & Tiernan.

Felts and the Machine

by ARTHUR M. MEARS*

THE felt manufacturer does not pose as a Paper Maker and therefore, in general, endeavors not to enter into discussions regarding machine conditions. It has been found that usually any such discussion leads to the conclusion that the felt manufacturer is trying to excuse the performance of his felt by blaming the machine. However, it is a fact that felt performance may be materially affected by any of the three following factors, i. e.,

(1) Quality and design of the felt,

(2) Conditions of the paper machine,

(3) Handling of the felt, such as starting up, and washing.

• Any of these may be the underlying cause of unsatisfactory clothing life or performance, therefore without careful analysis it would be difficult to definitely state the true cause.

Clothing cost represents a large outlay, and therefore, it has been given considerable attention by many operators. Mills usually rate clothing in terms of days' life and tons produced, as these figures are accurately obtainable but unfortunately they numerically indicate only the wearing quality in the felts. Long life is not necessarily the mosst desirable or economical quality from the standpoint of the paper maker, as various other questions, such as water removal, steam consumption, drying, finish, etc., must be considered. Long life, from the standpoint of brute wearing qualities and resistance to frictional wear, is one of the easiest qualities to embody in a felt. It can also be one of the most expensive qualities, as far as the user of the felt is concerned, since it may result in less water removal, which in turn may limit the production of the machine.

• Since Mr. Petrie has discussed machine conditions and pointed out the fact that the paper machine may be out of adjustment due to a gradual settling of foundations and other natural causes which may occur gradually and unnoticed by the operator, it may be in order to touch upon the resulting effects on felts.

Frictional wear contributes largely to the failure of any felt, and it is possible to entirely eliminate that factor. Other things being equal, the life of a felt is inversely proportional to the frictional wear placed upon it. It is impressive that a high percentage of felts are removed from paper machines because of a lack of uniformity in wear across the face of the felt.

• It would be natural to suppose that a felt would wear according to the friction imposed upon it by the machine and to the nip pressure. It has already been mentioned that it is practically impossible with the ordinary paper machines to maintain a uniform nip pressure across the face of the roll. The intensity of the nip pressure affects the life of a felt. The lack of uniformity in frictional factors wears the felt in local sections — sometimes on the edges, sometimes in the center, and always in streaks. Many felts come off of the machine with the bulk of the body in such excellent condition that considerably more service might have been expected. To obtain the maximum life that is built into the felt, it is therefore necessary to have the mechanical wearing factors uniformly distributed. A change in the design or make of the felt cannot correct the basic causes of the trouble under such conditions.

Usually a paper maker is proud of his machine and therefore hesitates to have defects in it noted. It should be borne in mind that the paper maker is not personally responsible for settling of foundations, wear, etc., and that, therefore, it is not to his discredit if mechanical imperfections be found in the machine. A paper machine is a complicated mechanism and it is surprising that more mechanical imperfections do not develop. Therefore, neither the paper maker nor the maintenance department should consider it an aspersion on their ability should a possible defect in the machine develop.

• Where unsatisfactory clothing life is obtained, it is a foregone conclussion that there must be some definite cause. It is natural, and usually the easiest explanation, from the standpoint of the paper maker, to blame it entirely on the felts. This tendency may be due in part to the fact that a felt is manufactured in a web, similar to a sheet of paper. All paper makers know that a sheet may be perfect when the mill roll is started, but suddenly the formation may change due to one of any number of causes, resulting in an inferior quality in the same roll. In other words, the sheet may be instantly affected by causes entirely foreign to the paper machine. This is not the case on a loom, where the procedure is quite different than on a paper machine. In the manufacture of felts, all of the yarn is made up and tested before the loom is dressed and the weaving of the felts started, so that it is easily controlled. Because of this, we feel justified in claiming that there can be little variation in two felts made from the same web and of the same yarn, and this holds true particularly as regards the warp. After the web is woven, it is carefully inspected before it is cut into the proper length and joined into the finished felt. At that time, before it is felted or fulled, the weave is very coarse and open, and any defect is extremely noticeable. Felt manufacturers, in

ARTHUR M. MEARS
Getting the Most Out of Felts

*Presented at the meeting of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association, Seattle, Washington, December 3rd and 4th, 1937. Mr. Mears is manager of the Pacific Coast Supply Company, representatives of F. C. Huyck & Sons of Albank, New York, on the Pacific Coast.

common with paper makers, are proud of their product, and put forth every effort to maintain the high quality of their product, and would not send out a felt that was known to be defective.

Felts being absolutely necessary to the manufacture of paper, it might be considered that the felt manufacturer is really a part of the paper making operation. In any operation, best results can only be obtained by close cooperation of all departments. If considered in this light, it is possible that more pains would be taken to determine the cause of trouble, rather than atomatically placing the blame on the felts.

● Unfortunately for all concerned, this too often happens, resulting in a serious loss. The felt manufacturers realize that frequently their product is unjustly blamed, and yet they do not feel free to call attention to certain facts which might indicate that the trouble lies elsewhere. As a result, the felt manufacturer assumes the blame and makes alterations in the felts to counteract effects of causes which should be eliminated.

Every felt manufacturer has many experiences of this character. An Eastern mill had been using a certain make of felt with entire satisfaction for a number of years when, without any apparent reason, approximately 25% of the felts gave poor results. It was only natural to assume that some carelessness or defect had developed in the manufacture of the felt and claim for adjustment was presented.

● Since 75% of the felts were giving excellent results, it was not deemed desirable to change the design of the felt. After a considerable loss had accrued both to the mill and to the felt maker, it was discovered that all of the felts which performed unsatisfactorily were installed by a new machine tender, who, in general, was a very competent man. In changing the felts he lost very little time and started making a good sheet almost immediately, but in so doing would not allow the felt to shrink properly. After this cause was corrected there was no more trouble with the felts.

On a certain board machine, felts began to fail on the back side, and it was thought that there was some defect in the felts. Ultimately, it was discovered that a weight lever on a press roll had been slightly bent so that the weight caught on one of the ribs of the side frame and would not permit the mechanism to function. This caused excessive nip pressure on the back side of the felt.

● In one mill two machines, running on the same sheet, gave widely different felt costs. The felt life on one machine was approximately half that on the other. At first it was assumed that some of the felts were at fault, and it was only determined after a long period of time that the felts as ordered were a little too short on one machine, so that the felt was not permitted to shrink up as it should when installed. In this connection, it is claimed by felt manufacturers that a felt should shorten very close to 10 per cent of its length while it is being shrunk on the machine.

In some instances the quality of felts has been questioned where they were actually damaged by the use of strong alkalis as wetting out agents and detergents. In one instance it took some time to discover this and it was only when the soap solution was spilled on to the felt some minutes before the machine was turned over (resulting in a particularly weak spot in felt, that the cause of the trouble was determined.

● From the foregoing we do not wish to infer that felts are never to blame for poor performance. Imperfect joinings occasionally cause trouble and the felt maker is sometimes responsible for improper designs. An unbiased investigation should always place the responsibility where it belongs.

Spaulding Running Again

After shutting down on Oct. 24, the Newberg, Ore., mill of the Spaulding Pulp & Paper Co. resumed operations the middle of November for an indefinite run. At least until after the first of the year, the plant will operate on a five-days-a-week basis, producing pulp for the domestic market.

Japanese business for November and December was postponed, to be picked up in January and February.

Dixie-Vortex Plant Ready in January

The new plant at Hollydale, California, of the Dixie-Vortex Company, manufacturers of drinking cups and containers, is expected to be completed and ready for operation the first of January, according to Geo. P. Hacker, Pacific sales manager of the eleven western states. Geo. Wolbach, production superintendent for the company, arrived early in December to install the machinery and supervise the arrival and placement of stock. Mr. Wolbach was sent from the home office at Easton, Pennsylvania.

Soundview Earns Twenty-Two Cents Per Share

The statement of the Soundview Pulp Company of Everett for the month of November shows a net profit of $113,055, equivalent to 22 cents per share on 488,250 shares of common stock, after depreciation and federal income tax before giving effect to the undistributed earnings tax.

This compares with a net profit of $143,150 in October, or 28 cents a share on the same number of shares, and $47,616 or 45 cents on the 104,625 shares in November, 1936.

For eleven months of this year the net profit, before the undistributed earnings tax, is $1,716,047, or $3.42 a share on 488,250 shares, as against $511,090, or $4.88 a share, on 104,625 shares for the first eleven months of 1936.

Soundview's November sales totalled 7,817 tons and production was 13,929 tons. In October sales were 7,722 tons and production 14,819 tons.

Quinn Elected Vice-President of Stebbins Engineering

Carl F. Richter, president of the Stebbins Engineering & Manufacturing Company and of its recently formed Pacific Coast subsidiary, the Stebbins Engineering Corporation, announces the election of A. S. Quinn as vice-president of the latter corporation.

Mr. Quinn has been manager of Stebbins work on the Pacific Coast since 1930 supervising the installation of the many digester, bleach plant and other linings in Pacific Coast pulp and paper mills.

He is a member of both TAPPI and the American Pulp & Paper Mill Superintendents Association, having served two terms as secretary-treasurer of TAPPI. At the Superintendents meeting in Seattle December 4th Mr. Quinn was elected secretary-treasurer of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association.

Mr. Richter returned to his headquarters in Watertown, New York November 24th after a three week's visit on the Pacific Coast.

CARL F. RICHTER, President Stebbins Engineering & Mfg. Co.

Some Factors Affecting The Life of Fourdrinier Wires

by WALTER S. HODGES*

AT the outset we are faced with the fact that fourdrinier wires constitute thirty-two per cent of the mills' machine clothing bill, being only surpassed in importance by woolens, forty-six per cent of your annual expenditures, and the remainder, or twenty-two per cent, being for dryer felts. However, your wires play the most important part in the formation of your sheet and without question have a greater influence on the finished paper than do felts.

All of you who have attended national meetings of the Superintendents' Association and the Technical Association know that hardly one of these meetings pass without some attention being given this question of machine clothing, usually in the form of both papers and discussions. If you look through West's Bibliography of "Paper Making," starting in 1900,, you will be struck with the fact that there are hundreds of articles and reports of studies concerning the subject. These range from manufacture through storage, usage, costs, increased life, and numerous other points.

● The Technical Association has done some work, principally questionnaires, but in my opinion fail to carry their work far enough in that they have never analyzed and tabulated their reports sufficiently. Here is a special report, number 141 of August 1930, on "The Cracking of Fourdrinier Wires." There are forty replies published here and a general summary of these shows twenty reasons suggested as causes for wires cracking. (More about this report later.)

Machine clothing has always been considered as a practically fixed and wholly necessary expense. However, all machine superintendents are busy men. Their job is to keep machines running and to make saleable paper with a minimum of rejects and complaints. Most of them honestly look forward to finding time toward doing more about trying to improve their machine clothing life with its resultant savings, but this is a wish that seems to have little chance for fulfillment unless they select someone under them to do this work.

● I shall sketch very briefly the outline of material requirements for the manufacture of fourdrinier wires and its bearing on the finished product. I believe the American Brass Company to be the largest supplier of the coarse wire (about .028 to .050 thousandths in size) which the wire mills know as "Rod" and I understand this is supplied to the larger wire companies after a formula based on the experience of the fourdrinier wire manufacturers. Wire drawing and annealing is done in the plants of the principal fourdrinier wire manufacturers. In their wire drawing and annealing plants comes their control of the finished product for it is here that tensile strength is balanced against ductility and the latter's relation to bending and stretching qualities of the wire. Fatigue resistance is balanced against abrasion resistance, grain size in the molecular structure of the wire itself is studied microscopically. Single strand annealing has been installed in order to give better control over this process. The importance of all this can be very quickly explained by stating that wires too soft wear out in too short a time while wires which are too hard fail from fatigue before actual wear has occurred.

● The question frequently arises as to why certain makes of wries will run on one machine in a mill and not on another machine successfully. This would seem to warrant the statement that paper machines are like human beings, similar but not identical; therefore, each must be prescribed for as an individual. This is already done in the case of woolen felts for each machine and is being done at an increasing rate in connection with wires, as I shall point out to you later in detailing some work done by Kimberly Clark in that connection. Some machine conditions having a bearing on this proper selection of wire are: the sizes of breast and couch rolls, return and guide rolls, whether or not the wire has a fairly flat return to the breast roll, suction box oscillators, fillers used, and certain chemicals used to whiten or improve the sheet.

How Many Wires Are Worn Out?

● Far less than fifty per cent of all fourdrinier wires are actually worn out, the greater part of them being removed for other reasons such as edge cracks, cracks in the body, trimmed until too narrow. Also in the past before brazing the joints became common, many wires were removed from the machines on account of seam trouble. While the joint is still the weakest part of the wire, wires with brazed joints will wear down farther than wires with sewed seams.

What Wears Wires Out?

Abrasion and metal fatigue wear out wires, with abrasion being the more important of the two but they are frequently combined.

Take a fourdrinier wire running eight hundred feet per minute. This is two hundred and eighteen miles in twenty-four hours, twenty-one hundred and sixty miles in ten days, which would be close to average life

WALTER S. HODGES
Abrasion and Fatigue Wear Out Wires

*Presented at the meeting of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association, Seattle, Washington, December 3rd, 4th, 1937. Mr. Hodges is Pacific Coast representative for the Appleton Wire Works, the Orr Felt & Blanket Company and the Asten-Hill Manufacturing Company.

on some machines. In looking over some recent British Columbia records, I note two wires with twenty days each at twelve hundred feet per minute, which is equivalent to sixty-five hundred and forty miles travel. When you picture these wires running as a belt to drive the entire wet end, together with the abrasive and corrosive factors involved, it is amazing that they run as long as they do.

What Is the Most Frequent Cause for Wire Removal?

● It used to be seams but since the perfection of the brazed joints now in common use, seam or joint failures are secondary and cracks in the wire body as the result of abrasive wear or fatigue (or both) are the commonest reason for wire removal.

Whatever the mechanism of failure of fourdrinier wires may be, one thing is certain and that is that wear or abrasion on the warp knuckles is the prime cause of failure. If the rate of wear could be reduced, the life of a fourdrinier wire would be increased to a corresponding extent. One of the principal points of wear is the suction boxes where as the warp knuckles slide over the suction box covers they are subject to wear as the result of friction with the cover material and this wear is greatly increased should the paper stock contain gritty material such as sand or filler. In connection with this matter of sand or grit in the stock, there appeared in the Paper Mill publication November 20th, 1930, re-print of an article from the British Papermaker by James Strachan on the wear of fourdrinier wires. I am including the statement as follows covering the findings of their laboratory with regard to weight of sand and grit in five hundred tons of their paper, at the same time indicating its source.

● Ordinarily a wire will wear down about one-half of the original diameter of the warp wire (provided there is no damage to the wire) although occasionally on a twill or long crimp weave the warp wire will be worn more than two thirds through their dimaeter before they begin to give way and crack out.

Approximate Weight of Material Used	Percentage of Sand in Raw Material	Total Weight of Sand
Sulphite Pulp, 135 tons	.02	.027 Tons
Mechanical Pulp, 375 tons	.32	1.200 Tons
China Clay, 60 tons	1.05	.630 Tons
Total Sand		1.857 Tons

Fourdrinier Wire Edge Cracks

● Such cracks are frequent cause for removal of wires through the necessity for trimming them and the wire subsequently becoming too narrow to carry the sheet. I mentioned in the first part of this paper a special report number 141 which was gotten out by the Technical Association in August 1930, starting from an inquiry from one of their members who was having trouble at his mill with edge cracks. As stated before, there were forty replies and a rather loosely drawn tabulation of these gave a list of twenty reasons for such failures, but a careful reading of the seventeen pages of this report shows that a considerable number of the operating men suggested that the couch roll or the breast roll (or both) should be checked to ascertain if they were not high on that part of the roll immediately joining the edge and suggested checking and possibly regrinding. If this subject comes up this afternoon for further discussion, I shall be glad to quote further from this report, if you are interested.

Suction Boxes and Oscillators

● These have the most important bearing on the life of the wire. Good maple covers have been very hard to obtain for the wide machines and while several synthetic materials have been offered for covers, they have not all been a success. Many of the mills have found that a maple cover with the end grain of the wood in contact with the wire makes an excellent cover and some of the mills impregnate these blocks with hot tallow prior to making up the cover.

Oscillators are recommended by all the wire manufacturers and probably there will be some discussion later among the operating men as to the type most preferred.

Table Rolls

● Rubber covered rolls are practically becoming standard on new machines; also have been placed on the tables of many of the older machines. Fabricated from steel pipe and covered, they are considerably stronger than the brass tubes and will run at a higher speed with little or no vibration if they are properly balanced. On some of the older machines there are occasionally rolls with bearings which do not permit the roll to turn. It goes without saying that this is bad for wire life. Also, occasionally on some of the older type machines there are table rolls with end play in the bearings and if a machine is operated with a shake, then this is likewise detrimental to wire life.

Should Wires Be Run Slack or Tight?

● There is some controversy among machine tenders and machine operating men relative to whether a wire should be run tight or slack. Our wire factory favors a compromise on this in that a wire should not be run too tight nor should it be run too slack. A wire too tight will stretch, a wire run too slack on the rolls will tend to slip thus adding extra wear.

The writer understands that some few paper machine have been equipped with dynamometers, attached in some manner to a floating roll on the return travel of the wire, these to indicate the tension exerted on the wire. These might be very helpful in that they would permit the machine superintendent to instruct his crews to the effect that the tension on a wire was not to be increased beyond a certain point, whereas as it now stands this is a matter of personal opinion with all three of the machine tenders on any particular machine, and there is rarely an agreement among them as to what constitutes a slack or tight wire so they adjust the tension to suit themselves.

Breast Roll Doctors

● There are several mills on the Coast with which the writer is acquainted who still have on some of their older machines the old type doctors which they force into place against the roll and keep in place with "chock" blocks. Sometimes their setting is so tight that it forms a most effective braking action and naturally adds heavily to the load on the wire. A lighter doctor built up from angle iron with a rubber

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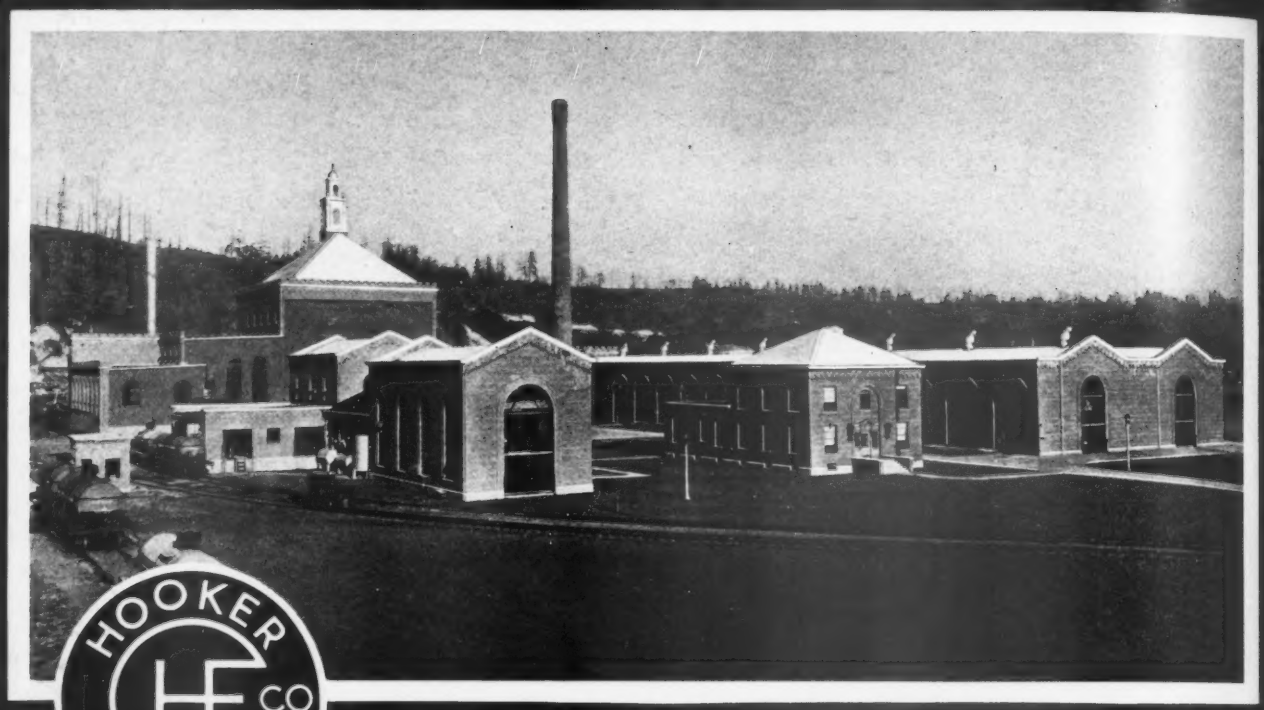

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Appreciating the diversified uses of Caustic Soda and Liquid Chlorine, the Hooker Company offers the technical services of an experienced engineering staff. Mills in the east and south as well as the west have used Hooker service to help solve their operating problems. At Tacoma, Washington, are maintained plant, laboratories, field staff and administrative personnel to serve west coast industries.

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blade so hung that it only rests lightly against the face of the roll, does the work just as effectively.

There are some few points not covered but these undoubtedly will be brought up in the discussion later.

In conclusion I would say that I would like you men to take issue with any statement I have made in connection with which you have doubt. Frank and open discussion is far more likely to throw light on a problem than writing about it.

September Pulp and Paper Imports and Exports

Exports of paper and paper products from the United States during September reached a value of $2,441,824, according to data released by the Pulp and Paper Section, Forest Products Division, Bureau of Foreign and Domestic Commerce. This is an increase of 6 per cent over August and 77 per cent over September of last year. Most of this increase over the previous month was in greaseproof and waterproof paper, which rose about 30 per cent, while overissue and old newspapers gained 16 per cent. Although boxboard, which was the second largest item by volume in August, declined 50 per cent, this was offset by a gain of 50 per cent in kraft paper, 48 per cent increase in tissue and crepe paper, 28 per cent in fiber and insulating board, while boxes and cartons rose to 1,388,319 pounds, a gain of almost 80 per cent.

While exports of newsprint declined 40 per cent from August, this still represents a gain of about 18 per cent over September, 1936. Uncoated book paper showed a similar gain over last year with a 69 per cent increase. Kraft paper exports represent the largest percentage gain over September, 1936, increasing 250 per cent. Of the 35 items reported, while only 16 showed percentage gains over the previous month, those represented the largest volume of exports. Only 10 items showed a decline as compared with the same month last year.

Exports of bleached sulphite pulp, largest single item in the shipment of paper base stocks, dropped 15 per cent, while the next most important item, unbleached sulphite, increased 97 per cent over the previous month. Total exports of paper base stocks increased from $2,498,706 to $2,807,426.

September imports of paper base stocks dropped almost 9 per cent from August, falling from $11,731,403 to $10,738,593. However, this was still almost 15 per cent over the same month in 1936. A drop in the import of pulpboard in rolls, paper board, and pulpboard is mainly responsible for the decline in September as compared with August.

Rags for paper stock marked a gain of 20 per cent over the preceding month and "All other paper stock" gained approximately 60 per cent over the last year's total. Imports of pulpwood, while showing a slight increase of 2 per cent over last year, dropped 30 per cent from the August total of 247,476 cords. Imports of unbleached sulphite pulp, largest single item in paper base stocks, increased only slightly less than 1 per cent, to 84,136 tons. The next largest item in this class, unbleached sulphate, dropped 11 per cent from the August total of 57,644 tons.

Dunstan of Melbourne Visits British Columbia

William Dunstan, general manager of the Melbourne Herald and Weekly Times, who negotiated contracts with seven Canadian news print mills for the supplying of paper during 1939-45 inclusive to a group of Australian and New Zealand newspapers, spent several days in Vancouver, B. C., on his way back to Australia. He paid a visit to Powell River Company's mill and conferred with officials of that company and Pacific Mills, Ltd. Both these British Columbia companies figure in the long-term Australian news print deal. He also talked with Percy Sandwell, Vancouver consulting engineer, regarding the proposed Australian news print mill in the Derwent Valley, Tasmania.

Mr. Dunstan was unable to throw much light on the Tasmanian project other than to say that $5,000,000 is to be put into the project. It is hoped to have the mill in operation about 1942, producing about 30,000 short tons annually from eucalyptus regnans or swamp gum, combined with imported sulphite.

Mr. Sandwell's advice has already been sought on this enterprise and he expected to be called to Australia at any time to take an active part in the construction. Mr. Dunstan says that Australian news print consumers regard the plan as insurance against isolation, although Australia has no hope of becoming self-sustaining in news print. The Canadian agreement now concluded will give Australia a guaranteed supply at competitive prices and permit the development of the Tasmanian industry as well.

Under the terms of the deal made with the Canadian mills, the price will be based on the New York price of Canadian news print, less freight to New York, plus ocean freight and insurance from principal Atlantic and Pacific ports, to main Australian and New Zealand ports. The buyers represent 75 to 80 per cent of these countries' consuming capacity. The contract provides that allowance is to be made for Tasmanian news print when that becomes available.

Mr. Dunstan said that he had expected rather arbitrary treatment from Canadian news print manufacturers, but instead had been treated with the utmost fairness. He believed that the seven-year contract would be advantageous to both buyer and seller. The Australians would have continuity of supply and maximum stability of price, it being their opinion that over a period of years the price paid for news print by United States publishers would continue to be the lowest of any major world market. The Canadians would gain by a somewhat increased volume of tonnage with protection against destructive competitive practices.

"In markets such as Australia and New Zealand," said Mr. Dunstan, "prices have tended to fluctuate considerably, rising sharply whenever North American demand increases. Within two years the swing upward in prices has been about $18 per short ton. We believe that the new contract will avoid such peaks and valleys."

Companies figuring in the deal, apart from the two British Columbia producers, are Consolidated Paper, Price Brothers, International, Mersey and St. Lawrence.

Although making no formal statement, Harold Foley, executive vice-president of Powell River Company, said he believed the move was in the direction of greater stability in the Australian market, regarded as particularly important by Pacific coast mills.

At present Australian and New Zealand publishers are consuming about 200,000 short tons of news print annually, of which Australia takes about 175,000 tons. Canadian mills supply about 140,000 tons, and under the new agreement they will undertake to deliver up to 175,000 tons.

During 1935 and 1936 the publishers paid 9 pounds, 10 shillings c.i.f. per long ton of 2,240 pounds. This year and for 1938 existing contracts call for payment of 10 pounds, 10 shillings c.i.f. per long ton.

The Australian hopes that the friendly agreement between his country and the Canadian mills will encourage a happier relationship between news print manufacturers and consumers on this continent. "All publishers should feel safer because of the reconstruction of bankrupt Canadian companies which has taken place and is still proceeding, resulting in the elimination of watered stock and over-capitalization. Our own experience has been that if publishers and manufacturers get together occasionally the results are mutually beneficial. Perpetuation of an atmosphere of hostility is bad business."

Mr. Dunstan sailed from Vancouver for Australia on November 24 on the liner Niagara.

October News Print Production

Production in Canada during October 1937 amounted to 314,594 tons and shipments to 322,661 tons, according to the News Print Service Bureau. Production in the United States was 78,352 tons and shipments 72,127 tons, making a total United States and Canadian news print production of 392,946 tons and shipments of 394,788 tons. During October 28,638 tons of news print were made in Newfoundland, so that the total North American production for the month amounted to 421,584 tons. Total production in October 1936 was 412,849 tons.

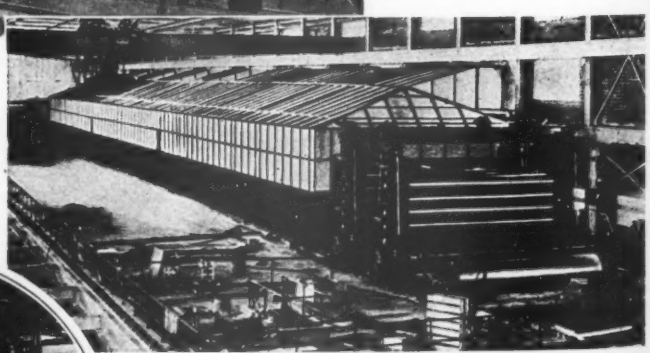
The Canadian mills produced 440,181 tons more in the first ten months of 1937 than in the first ten months of 1936, which was an increase of sixteen and nine tenths per cent. The output in the United States was 23,527 tons or three and one tenths per cent more than in the first ten months of 1936, and in Newfoundland 27,292 tons or ten per cent more, making a total increase of 491,000 tons, or thirteen and five tenths per cent.

Stocks of news print paper at the end of October were reported at 81,317 tons at Canadian mills and 27,692 tons at United States mills, making a combined total of 109,009 tons compared with 110,851 tons on September 30, 1937.

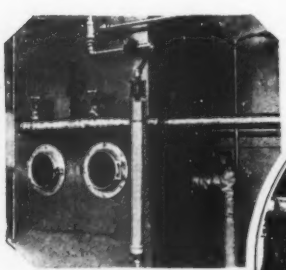
ROSS

HEATING VENTILATING AIR CONDITIONING DRYING

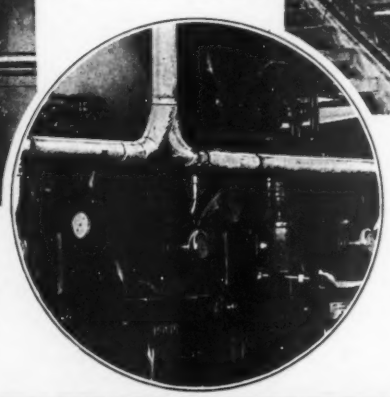
At Left: View of modern machine room in the new mill of the Crossett Lumber Co. for which Ross Heating and Ventilating equipment was specified. Machine is equipped with Ross Removable Panel Hood shown in photograph.



Below: Part of complete controlled air conditioning apparatus such as is being installed by Ross in Brunswick Pulp & Paper Co., Kraft Corporation and other prominent mills.



In Circle: Section of Ross Grewin High Pressure Ventilating System used by Southern Kraft, West Virginia Pulp & Paper, and others to assist in drying.



Above: The Ross Hood shown over the huge machine in the new West Virginia Pulp & Paper Co. Mill measures 252 feet in length. Other Ross equipment in this mill is used to introduce and distribute the large quantities of air required to prevent condensation and aid in drying the felts.

Let the long experience of Ross engineers save money for you on your equipment needs.

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Dyestuffs and Their Proper Application

by WILLIAM C. MARSHALL*

WILLIAM HENRY PERKIN, a London chemistry student, discovered "mauve," the first of the aniline dyes, accidentally, in the Royal College of London, while trying to isolate phenanthrene from coal tar to make artificial quinine. Since Perkin's startling discovery, chemists have produced hundreds of colors of various characteristics and shades.

The manufacture of dyes is an industry of much greater dimension than is commonly supposed. Colors (dyes) as we know them today, are very complicated chemical compounds. As most of you probably know, the products obtained from coal tar form the basis from which dyes are obtained. The products are obtained thru distillation with acids, alcohols, and other organic chemicals as well as inorganic compounds.

• There are, however, many steps between coal tar and the products derived from it and the final dyes.

There are many substances which are prepared from these coal tar materials which are in turn used for making dyes, explosives, perfume, etc. The substances used for dyes are called dye intermediates. There are about 500 different intermediates. A few of the more important ones are: Acid, Aniline, Chlorobenze, Para Dichlorobenze, Dimethylaniline, Nitrobenze, Phenol Phthalic acid.

By taking these dye intermediates and combining them with acid, either organic or inorganic or both and subjecting them to temperature and pressure, you get the various dyes, depending on the intermedite used and chemical. You will get an Acid Color, Basis Color, Direct Color, Sulphur Color, Lakes or Vat Colors.

• The colors of principal interest to the paper maker are Acid, Basic and Direct. In certain classes of paper a pigment is of importance such as sap brown which is a product of fossilized vegetation and soluble in water, but becomes an insoluble pigment immediately on contact with alum.

Soluble American Blue is another pigment made by the combination of iron and cyanide, soluble in hot water and precipitated into a pigment on contact with alum.

Then we have the insoluble pigments such as ochres that act similar to a filler and are held mechanically in the sheet.

• Now to get back to the aniline colors. The acid group represented by colors such as Orange Y and 2R —Acid Blue R—Croceine Scarlet M 400 Conc. — Nigrosine — Acid Green 2G Conc. and Metanil Yellow, are color bodies themselves and are called sulphonic acids. They are then neutralized with an alkali and usually become a sodium sulphonate—or acid color. The acid portion of the salt (chemically a salt is a compound of any base with an acid) being the color portion.

For example salt (table salt) is NaCl replacing the acid part chlorine with the color would make it a Na (sodium color compound). These acid colors are only used in sized paper as they depend on being absorbed by the size to become fastened to the paper fibers. When the size is precipitated by the addition of alum the color becomes fixed to the fiber only thru the size for which acid colors have an affinity. Neither size or alum alone is enough to set acid colors, but the correct combination of both is necessary.

Direct Colors are closely related to the Acid Colors in that the color portion of the salt is the acid portion of the compound. But they are not as stable compounds, the color portion is more easily separated from its sodium base. Direct color salts are so readily broken up that the color portion will attach itself to, or dye any kind of paper stock, merely with a little salt and heat.

• If you take a solution of most direct dyes and add a weak solution of sulphuric acid or alum, you will get a precipitate; this is the unsoluble acid color, which on adding sufficient alkali to overcome the acid and with the aid of heat, this insoluble color will be redissolved.

Direct colors also form lakes readily and are precipitated from solution with little or no dyeing effect if the water in the beater contains lime, magnesia, alum, sugar of lead or any metallic salt. That is the reason for having and being sure your beater is on the alkaline side before adding direct colors.

Because of their affinity for fiber and because they can be discharged on a fiber by salt and heat, they are extensively used in blotting and absorbent papers and papers with little or no size or alum. They can be used in sized papers but are duller than acid colors. Examples of this group are—Pheno Blacks, Pheno Blue 2B HM Conc., Benzo Purpurine, Brilliant Fast Yellow G2N Conc. etc.

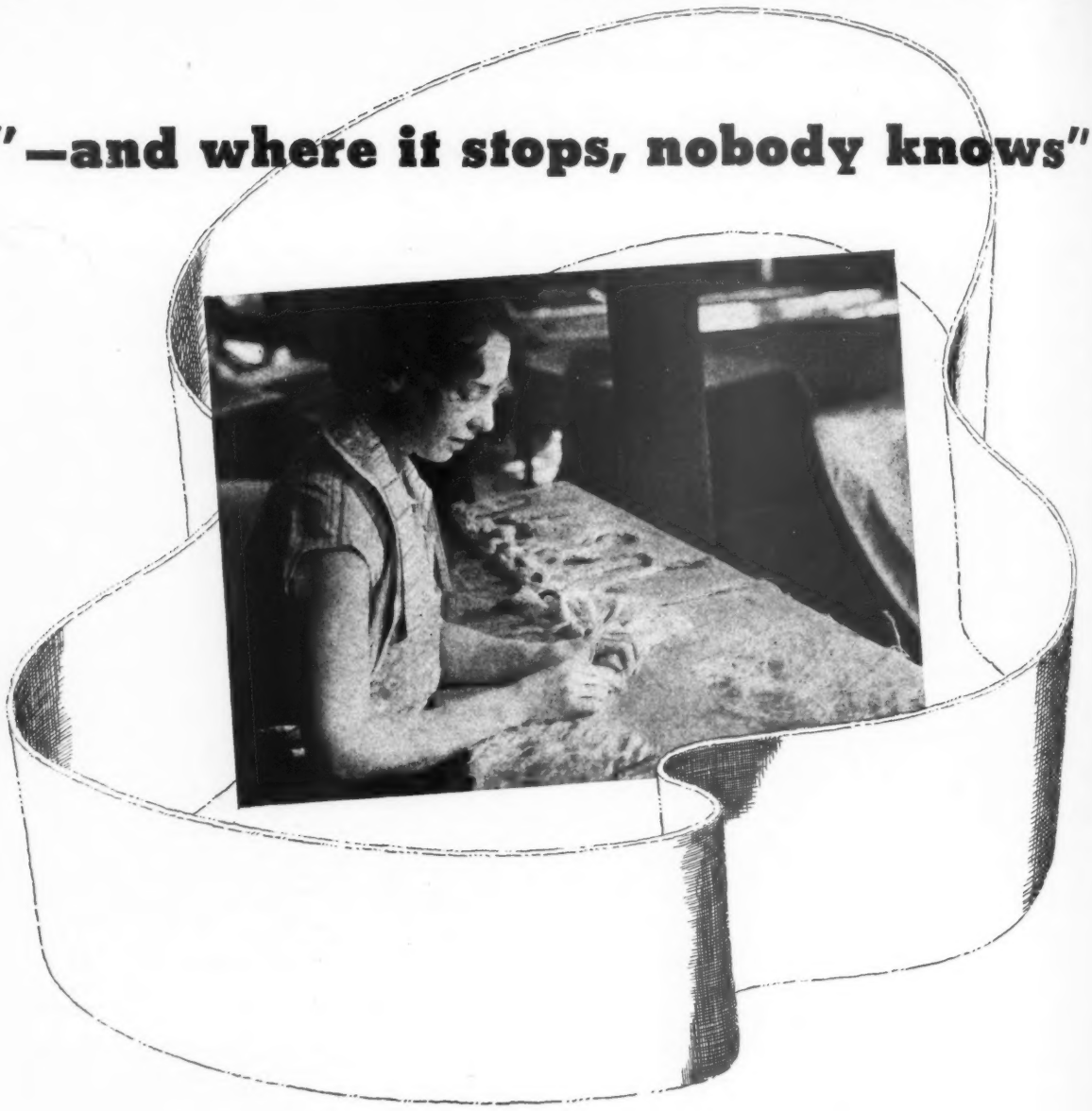
• Basic colors are chemically the opposite of acid colors, the color portion of the salt being the base.

The acid color salt might be termed a sodium colored sulphon-

WILLIAM C. MARSHALL
Operators Are Confronted With Constantly Changing Variables

*Presented in outline form at the dinner meeting of the Pacific Section of TAPPI, Port Angeles, Washington, November 9th, 1937. Mr. Marshall is associated with the Pacific Coast Supply Company, Pacific Coast representatives for Heller & Merz, manufacturers of paper dyestuffs.

"—and where it stops, nobody knows"



To join felts, the two ends must be woven together by hand—and woven so that the weave, texture, and strength at the join are exactly the same as in the rest of the felt. It's a long, painstaking, exacting operation. It's one of the many time-consuming hand operations that enter into the manufacturing of felts.

Kenwood felts are joined with such care and skill that, except in the very coarse types of felt, the joining can not be detected. This means that the felt wears evenly—and puts an even finish on the paper.

KENWOOD
WOOL PRODUCTS

Pacific Coast Representatives
Pacific Coast Supply Company
Pittock Block—Portland, Ore.
708 White Bldg.—Seattle, Wash.
343 Sansome St.—San Francisco, Cal.

F. C. HUYCK & SONS
ALBANY, NEW YORK

ate, and the basis color salt is a color base chloride.

Basic colors are precipitated, or thrown out of solution, on the addition of an alkali. Basic colors should always be dissolved with the aid of Acetic acid, for should there be even a trace of alkali present, some of the color base will be thrown out of solution and there is a loss of strength. Basic colors have an affinity for Tannic acid and in combination with tannic acid will form an insoluble compound.

● This tannic acid or tannin exists in wood. We know it is present in unbleached sulphites and kraft pulps and basis colors have a good affinity for these pulps. These colors as a group are the strongest technically and the brightest of all the Anil groups. Such colors as Safranine, Rhodamine, Methylene Blue, Auramine and Green MX Conc. (Victoria Green) are representative of this group.

Now it comes to a question of application. We will take up common abuses of color, they are not many but are serious.

Feathering

● If too hot a concentrated color solution is added to the beater it fastens itself to the fiber and causes a condition called feathering. To prevent this the color should be diluted as much as possible by cold water to approach closely the temperature of the stock and water in the beater and added near the roll to insure rapid mixing.

Incorrect Addition of Colors and Chemicals

● Acid and direct colors should be added to a soft stock, one that is slightly alkaline, made alkaline either by soda ash or rosine size. In that case the size should be first, then the color, and then the alum. We know that an alkaline furnish would be ruinous to basis colors and that an alkali may destroy more strength than subsequent addition of an excess of alum could restore. So if in a sized sheet we add the rosin size first, then enough alum to partially set the size or bring the beated to practically a neutral pH, then the color and then the rest of the alum.

Time

● It is important that all beaters, if possible, be treated alike. For example, the size should be allowed sufficient time to thoroughly disperse and mix with the stock before the addition of the color, say 15 minutes, then each and every beater on that order should have the size in 15 minutes, then add the color, let it mix for 15 minutes, then add the alum and let it mix for 15 minutes. Then dump; if you hold the beater longer than 15 minutes or less than 15 minutes you will get a variation in shade. The time 15 minutes is only used as an example, fast circulating beaters may take less time while others more time. The main thing is to treat all beaters alike when on a run.

Alum

● Many mills do not have a liquid alum system but add alum dry. A beaterman will throw a pail full in the beater and nine times out of ten drop the beater before it is thoroughly mixed. A funnel shaped receptacle with a small opening but with capacity of one or two pails of dry alum fastened near the roll will spread the alum evenly and a man does not have to stand there and spread it.

Cleanliness

● By cleanliness we mean not to use a scoop used in Violet in the Green barrel, or a scoop used in the Orange barrel in the Green barrel. This has been known to cause trouble in many a beater room due to contamination of colors.

Don't try to dissolve Basic and Acid dyes in the same pail or Basic and Direct because they will precipitate one another. Acid and Direct in most instances can be dissolved together.

Costs

● Dyes are probably one of the most expensive raw materials used in a paper mill. True we don't use much per ton of paper but per ton of dye the cost is high, so ½ oz. or $\frac{1}{16}$ oz. dropped here and there runs into money; so be careful. A dye at 25c a lb. is $500.00 a ton; at $1.25 a lb. is $2500.00 a ton.

Last year a certain mill used approximately 6,000 lbs. or dye, three tons at an average price per pound approximately 70c or $1400.00 a ton. Paper mills as a rule are more careful of their pulp which costs about $50.00 to $70.00 a ton. One pound of pulp at $50.00 a ton is 2½c a pound. One ounce of color at 70c a pound is approximately 4¼c an ounce. From this you can see the necessity for avoiding the spilling of color on the floor. Color should be handled as one would handle a precious metal.

Conclusion

● Paper mill operators are confronted with constantly changing variables and the best results can be obtained only when there is complete cooperation between assistants, the management, sales department and the customer. The most economical result can be obtained only when everyone, from the purchaser of the paper product back to each official of the mill, knows the reason for each specification and its effect on the cost and the quality of the product.

● There are many things other than dyestuffs that the mill operator has to contend with, such as the condition of the stock and its beating water whose degree of hardness is changing almost constantly, rosin soap and actual rosin content, clay, agalite, alum, tannic acid, speed of the machine, drying, proper heat distribution, formation, tensile strength, fold, surface finish and pH.

These are a few of the troublesome factors; human mechanical, physical and chemical, aside from those pertaining to color, that confront the paper mill operator in the manufacture of paper.

Rayonier Declares First Dividend

At a meeting in San Francisco November 10th directors of Rayonier Incorporated, a recently formed merger of the Rainier Pulp & Paper Company, Olympic Forest Products Company and Grays Harbor Pulp & Paper Company, with plants in Western Washington, declared the new company's initial quarterly dividend.

This will amount to 50 cents a share on Rayonier's $2 cumulative preferred stock and 50 cents a share on its common stock. Both are payable January 1 to stockholders of record December 15th.

It was provided that the $2 cumulative preferred stock should be cumulative from October 1st and its dividend be made for the full quarterly period, although the effective date of the consolidation was November 2nd.

St. Helens Pays Dividend

On December 1, the St. Helens Pulp & Paper Co. paid a four per cent dividend, or 40c, double the usual quarterly payment, bringing dividends for this year up to 12 per cent.

Last year the company paid total dividends amounting to 14 per cent. This does not, however, reflect the comparative profits of the two years, inasmuch as this year the company is retaining sums in the treasury for future use. Undistributed profits taxes are, of course, being paid on this.

1937 has been a year of good volume, showing an increase during the first ten months, according to President Max Oberdorfer.

What the Machine Builder Has Done to Improve the Life Of Machine Clothing

by R. T. PETRIE*

IMPROVEMENTS in machine design and the proper application of the improved materials of construction now available, have added materially to the life of machine clothing in recent years. In this paper I will attempt to outline some of these improvements.

● Starting with the fourdrinier machine, apron boards have been made adjustable and their construction is such that there is very little possibility of them sagging and rubbing on the wire. The breast roll has been improved to eliminate any deflection of the body of the roll, which in a great many cases, was responsible for the loss of wires through wrinkling when additional tension was applied to the wire. This has been accomplished by using larger diameter rolls, heavier shells, and the application of the truss section shell to the wider machines. The adoption of anti-friction bearings in place of plain bearings on the breast roll has reduced much of the wire slip at this point, and the resultant wear on the wire. Breast roll doctors are made much lighter, have flexible blades, and are balanced, so there is a minimum of pressure on the roll and the braking action is reduced to a minimum.

Improved table roll design has also added to the life of the fourdrinier wire. Chief of these are the bearings which are now all of the anti-friction type. The eccentric type of bearing housing permits easy vertical adjustment of the roll to very close tolerances, permitting an even distribution of the load on all of the rolls, and also allowing for rolls to be swung right away from the wire when operating on very free stock. Table rolls have been made lighter and more rigid, and put in dynamic as well as static balance, which eliminates whipping of the rolls at high speeds, and the consequent ill effect on the life of the wire. Bearings are more rigidly mounted, and when the forming table is shaken, rolls are not sliding back and forth under the wire causing excessive wear as in the case of many of the older types of bearings. Present day wire roll coverings have also contributed their share towards longer wire life.

● Heavy deckle straps have been replaced in many cases, by light deckle boards and the strain on the edges of the wire greatly reduced.

Suction boxes provided the point at which the greatest wear takes place on the wire, and according to investigations conducted by wire manufacturers, is responsible for as much as 85% of the total wear on the wire. Various materials for suction box covers, ranging all the way from chrome plating to various treated woods and synthetic materials, have been tried in recent years to cut down friction at this point with varying degrees of success. The adoption of improved types of rotating suction boxes, and better control of the vacuum on each individual box have added considerable to the life of the wire. Suction box oscillators of the hydraulic type, with smooth even action are great improvements over the old eccentric types which were jerky in operation causing the wire to slip on the couch roll.

● The introduction of the suction couch roll and the elimination of the old jacketed heavy top roll and guard board, removed a very heavy strain on the fourdrinier wire. Both had a heavy braking action on the wire, resulting in a high percentage of slip on the bottom couch roll and excessive wear on the wire.

Wire rolls, as in the case of table rolls, have been made lighter and more rigid. Coverings have improved and bearings are now all of the anti-friction type. All are put in perfect balance eliminating strain on the wire through whipping at high speeds. Roll diameters have been increased to eliminate sharp bending of the wire and the shortening of its life through fatigue. Wire roll doctors are lighter, have very little braking action on the rolls, and clean the rolls more efficiently eliminating the danger of ridges in the wire through accumulation of stock on the surface of the rolls.

● Showers are more efficient and do a more thorough job of cleaning the wire of stock and filler than many of the older types.

Wire guides have also come in for their share of improvements. The reduced gear type has proved very efficient on high speed machines and the wear on the edge of the wire greatly reduced.

● Wire stretchers of the new swing arm type maintain a more uniform tension on the wire than the old screw type, with which it was

R. T. PETRIE
Cooperation Between Operators and Machine Builders

*Presented at the meeting of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association, Seattle, Washington, December 3rd and 4th, 1937. Mr. Petrie is Pacific Coast representative for The Bagley & Sewall Company of Watertown, New York.

Shell can spot hidden flaws in Power Offtake

Bearings on planers . . . hot to the danger point! Sticking shotgun feeds. These conditions can cripple an entire mill. Put men out of work. Skyrocket your overhead *overnight!*

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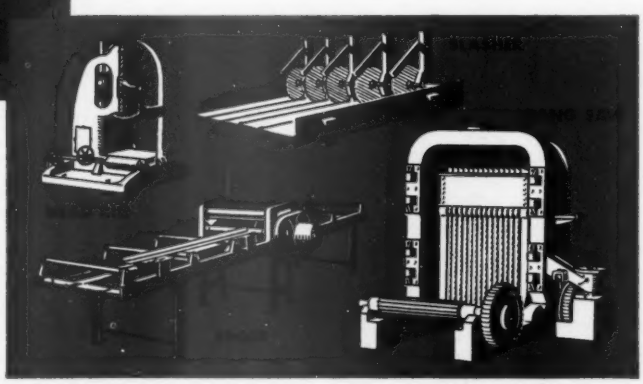
Your local Shell office will give you full facts about these improved lubricants. Or write: Shell Industrial Lubricants Division, Shell Building, San Francisco.



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This 1 1/2-inch flanged Globe valve, with removable seat, is one of a series of other stainless Valves made by Vaughan for the filling floor of a large Northwest Pulp Mill.

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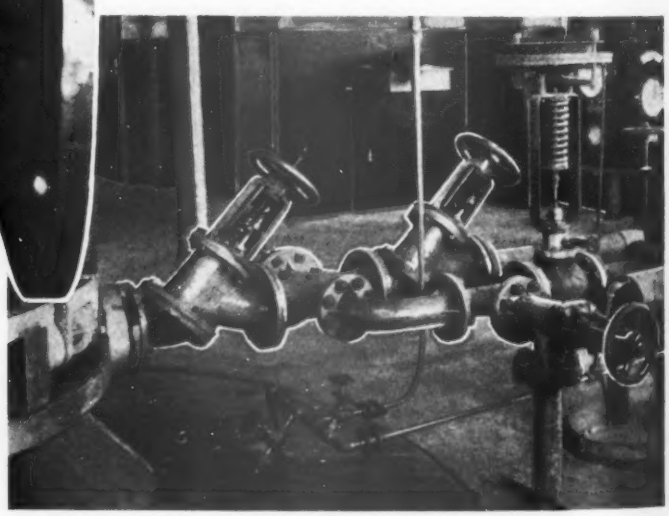
The name "Vaughan" on a stainless valve, whether manually operated or motorized is your guarantee of carefully supervised casting and construction. Collaborate with our engineers ... we'll help you solve the most complex problems.



VAUGHAN MOTOR COMPANY

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impossible to tell how much tension was being applied to each side of the wire. The newer type of swing arm stretchers, use a barrel and chain instead of the rack and pinion, which very often became clogged with stock and was intermittent in operation. The stretcher is actuated through a cross shaft and pulley by one set of weights in the basement, and the same amount of tension exerted at both ends of the stretch roll. With this type of stretcher it is also possible to calculate the amount of tension being applied to the wire.

With the new Simplex Quick Wire Change Fourdrinier, when a new wire is to be put on, it is strung out in the isle on carriers, and pulled on over the fourdrinier. The pull is exerted on the carriers, and the danger of dents and other damage to the wire while being put on has been reduced to a minimum. Damage to wires when being put on, has resulted in more wires being taken off before they are really worn out, than through any other cause.

● The general design of the fourdrinier has been improved with the view of lengthening wire life and cutting operating costs. The number of wire and table rolls have been reduced to a minimum, and by relocation of the rolls, many sharp bends have been eliminated. Stainless steel bolts and capscrews have replaced those made of bronze, which we all know, often became fatigued, broke off and fell in the wire with disastrous results. Everything possible is being done to cut down frictions, make parts more accessible, and easier to handle. The result is longer wire life.

In reference to wet felts, improved design of the press parts has also contributed to their increased life. Modern design has resulted in more rigid press rolls, which has reduced crowning to a minimum. It is virtually impossible to grind a roll with a perfect crown to give a uniform nip pressure the full width of the sheet. This is due to the variations in design, materials of construction of the roll core and covering, and the variations in the weight applied to the roll by each individual operator. This fact effects the life of the felt more than anything else, and the machine builders in recent years have endeavored to reduce the deflection of the roll as much as possible. Recording instruments are now available that give a continuous record of the load on the press at all times, and any erratic operation of the press can be readily detected.

● Bearings, especially top press roll bearings, have been improved to reduce friction and lessen drag on the felt. Most of these bearings are now of the anti-friction type. The introduction of the ordinary suction press roll was a great step forward in regard to felt life, but the rubber covered suction press roll has gone still further in this respect. Remarkable increases in felt life have been shown with these installations and in many cases operators were able to run without the suction flat boxes on their felts. Press roll doctors are balanced, more flexible blades are used and the braking action on the roll greatly reduced.

● Top press roll drives of the differential and electric types are now in general use, eliminating the necessity of driving the top roll through the felt, which we all know shortened the life of the felt considerably. Felt rolls have been made lighter, more rigid, and coverings greatly improved to reduce wear on the felts. All are put in perfect balance and mounted in anti-friction bearings. Worm rolls now have a uniform spiral properly applied to the roll with rounded edges to reduce wear on the felt as much as possible.

● Felt conditioners and suction felt rolls are fast replacing the older methods of cleaning felts and adding to their life. Rotating suction boxes are also replacing the flat suction box and reducing the wear on the felt at this point to a great extent. Felt guides have been improved and the old swing type is fast being replaced by the ratchet type which is easier on the edge of the felt. Felt stretchers are designed to give a more uniform tension the full width and a greater ease in operation Showers of modern design maintain a more uniform flow of water on the felt and eliminate many of the undesirable effects resulting from the uneven flow delivered from many of the older types of showers.

In the case of board machines the adoption of drives for the molds on the higher speed machines have greatly lengthened the life of both the felts and the face wires on the molds. Whippers have been improved by replacing the old wooden bars which often splintered and cut the felt, by bars made of metal and properly crowned to eliminate excessive wear on the edges of the felt. Suction turning rolls and extractor rolls have also contributed much to increased felt life—in a number of cases by eliminating suction flat boxes, wringer rolls, and auxiliary presses and their detrimental effects on wet felts.

Spiral bevel and hypoid gear drives have replaced the old mortise bevel gear drives which through uneven teeth caused vibration of the press rolls and corrugated the rubber covers resulting in additional wear on the felt.

● In the case of dryer felts, many refinements of design of the dryer part have helped considerably in prolonging their life. Chief of these is the automatic felt stretcher which is designed to maintain an even tension on the felt at all times, and of ample capacity to take care of stretching and shrinking of the felt when the sheet is on and off the dryers. Dryer rolls and felt rolls are carefully balanced to relieve any intermittent stresses on the felts from this source. Bearings are practically all of the anti-friction type with means provided to prevent grease and oil getting from them on to the edges of the felts.

Dryer heads have been redesigned to prevent warping and there is little chance of the dryers running ecentric from this source. More efficient felt dryers are now in use and are being mounted in anti-friction bearings with very litte drag on the felts. Dryer gear design has improved to such an extent that vibration even on the high speed machines is reduced to a minimum. Felt guides are much more efficient, and do not wear the edge of the felt to any great extent. All in all, the dryer section has been designed to give the operator every opportunity to care for the dryer felts with the minimum of inconvenience.

● There is one point that I would like to stress before concluding this paper and that is maintenance. Improperly lubricated bearings will exert considerable drag on the felts and wires and shorten their life. Doctors must be kept free and the blades in good condition to prevent scoring and drag on the rolls. Stretchers and guides must be kept in first class condition to relieve unnecessary strain and wear on the machine clothing as much as possible. Rolls must be reground as soon as there is sign of uneven wear of the roll covering.

If at all possible when felts and wires are changed bearings should be inspected for wear, as worn bearings will throw rolls out of line and effect the life of the clothing. The

whole machine should also be periodically checked for alignment and level. Settling of foundations, vibration, and the gradual loosening of bolts are all causes of machine parts getting out of line. These changes take place so slowly that they are imperceptible, and the consequent increase in clothing cost so gradual that it is hardly noticed unless comparisons are made over a long period of time. Rolls that are out of line guide the felts and wires first to one side and then the other, resulting in considerable friction and wear between the strands, which would not occur if all rolls were kept in perfect alignment, and this can only be accomplished by careful maintenance.

● The Improvements I have mentioned are the result of close cooperation between the mill operators and the equipment builders, and while much has been accomplished, there is still room for further improvement in equipment to increase the life of machine clothing.

The British Columbia Log Export Problem

Difficulties involved are currently discussed in business and political circles

● So intense has been the feeling against continued invasion of British Columbia's forest industries by Japanese that Hon. A. Wells Gray, minister of lands, threatened in a recent speech to "expose" the prominent Vancouver business men who have "lent their names" for the incorporation of companies in the province controlled by Japanese capital.

"Japanese intrusion into the forest reserves has been made possible only by British subjects loaning their names for the purpose of incorporation," said Mr. Gray. "These companies are owners of Crown grant timber obtained from the Dominion government, and export of logs from those areas are outside the control of the provincial authorities."

● It is understood that representations have been made to Premier T. D. Pattullo, pointing out that such an exposure would be misconstrued. A Vancouver lawyer whose name appears in the list of incorporators of at least one Japanese-controlled companies operating in British Columbia, told Pacific Pulp & Paper Industry that there was nothing illegal or reprehensible in the action of a British subject in cooperating in such a deal by representatives of foreign interests.

"If Canadians are to be debarred from lending their assistance in such matters and if their names are to be given out in such a way as to hint that they have been traitors to their country, we might as well shut up shop so far as foreign trade is concerned," said this informant. "Any connection I have had with Japanese interests has been purely in the line of everyday business. I cannot imagine why lumber and pulp companies should be singled out by the minister. How about shipping companies and a host of other organizations carrying on business between Japan and Canada, incorporated in Canada?"

● Everyone seems agreed that the root of the trouble lies in the lack of control over Crown grant timber. Apparently there is nothing that can be done about it without sanction of the Canadian government, much as the British Columbia authorities, yielding to public pressure, would like to cancel all foreign export of raw logs. However, these Crown grants go back many years, and to cancel them now would be tantamount to repudiation of bonds and set a dangerous precedent, according to legal authorities.

The provincial government derives a certain amount of consolation from the fact that very little worth-while timber remains on Crown grant areas. Most of the Crown grant timber controlled by Japanese in British Columbia is at the north end of Vancouver Island and in the Alberni Canal district. Nippon Soda Company owns the timber at the north of the Island, and this is said to be not particularly choice, although it contains approximately 500,000,000 feet of pulpwood.

● Japanese have held a considerably larger amount of pulpwood on the Queen Charlotte Islands, but this is not Crown grant and the government can insist on utilization of the wood within the province.

Several organizations have protested to the government against exploitation of British Columbia's pulpwood resources by Japanese, but the provincial authorities contend that, except in the case of non-Crown grant timber, they are powerless. One suggestion being advanced is that the provincial government impose a stiff tax on logs exported. Even if the provincial government has authority to make such a levy—and this is doubted in some quarters inasmuch as it might be construed as in restraint of trade, a federal prerogative—the fact that it would have to be generally applicable is seen as an objection. For instance, every year sees considerable pulpwood exported as logs to Washington state from areas selling only cedar and Douglas fir to the British Columbia mills. In other words, the pulpwood would probably be wasted if not disposed of by export. The government does not wish to interfere with that trade, but officials wonder how exports to one country could be taxed to the point of prohibition while exports to another were left unaffected.

● Duncan Board of Trade, representing the famous timber area around Cowichan Lake, has already made representations to the federal government asking for a national tax on log exports. H. B. Vogel, who introduced the question at a recent meeting of the board, said that 218,000,000 feet of logs was exported from the province last year. He recalled that several years ago the provincial government had collected an export tax, but this had been ruled unconstitutional.

L. H. Coulter, sales manager of Industrial Timber Mills at Youbou, Vancouver Island, told the meeting that export of logs was wrong "financially and morally." Mr. Culter, incidentally, is a member of the lumber industry's advisory committee on log export and has been frequently in consultation with the provincial government on the question.

● Carlton Stone, manager of Hollcrest Lumber Company, said that $3 a thousand would be a sufficient duty, and that the Canadian government has ample authority to impose it.

B. C. Legislators Support Company Town Act

The provincial legislature has rejected legislation seeking to open up company towns.

Those who advocated the change claimed that labor organizers and polit ical representatives should have free access to private property controlled by pulp and lumber companies. In the past, the operators have contended that they had the right to refuse admission to persons whom they deemed undesirable. There were several cases in court during the summer testing this right, and the companies were upheld.

The government, by turning down suggested changes in the so-called Act Respecting Industrial Settlements, has sided with the companies.

Soundview Declares Extra Stock Dividend

Directors of the Soundview Pulp Company, meeting in San Francisco November 5th declared an extra dividend on the common stock of 2/100 of a share of $100 par value 6 per cent preferred, equivalent to $2 par value of preferred, payable, subject to approval of the California Corporation Commission, on December 15th to stock of record November 15th.

The company also declared the regular quarterly cash dividend of 25 cents on the common, payable December 1st to stock of record November 15th, and the regular quarterly preferred dividend of $1.50 per share, payable November 25th to stock of record November 15th.

Rayon and other CHEMICAL USES OF WOOD PULP

Enka Production Expanded

The rayon yarn production of the American Enka Corporation at Enka, North Carolina has been increased ten times since the plant was built in 1929.

Originally production was on the basis of 2,000,000 pounds per year but with the expansion program completed early this year yarn production is now on a 20,000,000 pounds per year basis. American Enka produces viscose rayon yarn.

Japanese Rayon Production Down Slightly

Production of rayon yarn in Japan during September amounted to 27,000,100 pounds, representing a decrease of 1,879,300 pounds, or 6.5 per cent, below the previous month's production of 28,879,400 pounds. Rayon yarn output during September 1936, was 22,967,700 pounds. Total production during the first 9 months of 1937 amounted to 246,414,100 pounds, as compared with 186,516,800 pounds during the similar period of 1936, according to the Japan Rayon Producers' Association.

There were 444,248 spinnerets set as of September 30, 1937, an increase of 1,388 over August 31, 1937.

The decrease in September yarn production has been ascribed by the local press to the extension of production curtailment, which at present is established at the basic rate of 33.5 per cent at mills with more than 15,001 spinnerets and 31 per cent at smaller mills. It has been decided by the Japan Rayon Producers' Association, subject to the approval of the Government, that during November and December 1937 the cooperative storage of yarn production will be increased from the rate of 15 (effective in September and October) to 18 per cent. However, a decrease is apparently contemplated in the amount assigned for cooperative storage rather than an increase which the advance in the rate would seem to call for, since at least 5 per cent of the storage requirements is to be met through the sealing of additional spinnerets. Thus, there will be actually an increase in the rate of curtailment for all mills during November and December. In August 1937 about 25 per cent of the yarn production was stored to prevent a market glut.

The production figures given above include the proportion placed in cooperative storage under the jurisdiction of the Japan Rayon Producers' Association. Withdrawals from such storage may be made by mills on the understanding that a corresponding reduction in output will be effected. Rayon yarn not withdrawn before the expiration of one year becomes the property of the Association, but in practice such a situation does not arise as the individual mills withdraw their stocks within the allotted time and decrease production accordingly. In effect, the cooperative storage system is a means of achieving additional production curtailment, but on a basis which allows a greater freedom to the individual mills to select, within a period of a year, the time when a decreased output is most desirable.

The Japan Rayon Producers' Association holds approximately 8,000,000 pounds of rayon yarn in cooperative storage. During September, 1937, member mills withdrew 239,900 pounds of yarn from this supply.

Cloth Exports Improve

Contrary to the trend of the previous 3 months, exports of Japanese rayon cloth showed a substantial increase during September, 1937. Exports for the month totaled 43,115,964 square yards valued at 14,394,762 yen representing a gain over August, 1937, of 28.3 per cent in quantity and 23.7 per cent in value. Compared with the same period of 1936, the volume of exports increased but 0.7 per cent but the rise in value was 14.9 per cent. This increase is reported in the local press to be due to a gradual change to a higher quality of goods in shipments to markets abroad, but it is doubtless true that higher prices are also partly responsible.

Total rayon textile exports for the first 9 months of 1937 amounted to 356,856,750 square yards valued at 114,877,963 yen, as compared with 384,990,986 square yards valued at 108,071,403 yen, a decline in volume of 28,134,236 square yards, or 7.3 per cent but an increase in value of 6,806,560 yen, or 6.3 per cent.

Yarn Exports Increase

Rayon yarn exports showed a marked increase in September 1937, over the month before, totalling 5,723,500 pounds valued at 4,469,861 yen as compared with exports during August of 3,617,700 pounds valued at 3,114,834 yen, a rise of 58.2 per cent in quantity and 43.5 per cent in value. Exports to China were stopped completely during the month but a large gain was registered in shipments to British India, the increase amounting to 1,955,000 pounds or 125.8 per cent in quantity and 1,307,428 yen or 102.0 per cent in value. This increase accounted for 92.8 per cent of the net gain in volume of exports during the month. The largest decline in exports to individual countries during September, amounting to 179,900 pounds, was noted in the case of shipments to Mexico.

Total exports of yarn for the first 9 months of 1937 continue well above those for the similar period of 1936, as indicated in the following table:

Rayon exports.	Jan.-Sept. 1937	Jan.-Sept. 1936	Increase 1937 over 1936	Increase 1937 over 1936
Quantity (in lbs.)	40,432,700	33,279,100	7,153,600	21.5%
Value (in yen)	32,955,573	21,928,875	11,026,698	50.3%

The considerably greater advance in value of Japan's total exports of rayon yarn during 1937, as compared with the increase in quantity, is indicative of the substantially higher prices being received for this year's shipments.

According to the local press, the sharp increase that took place in Japanese exports of rayon yarn in September was causing local manufacturers of rayon textiles to fear that their industry may suffer a serious setback in its export trade through the development of more rayon-weaving mills abroad.

The destinations of Japan's exports of rayon yarn during the past 3 months were reported as follows, only the yen valuation being available for the complete list of countries:

As of September 30, 1937, stocks of rayon yarn reported on hand in mills affiliated with the Japan Rayon Producers' Association and in warehouses in Tokyo, Osaka and Fukui amounted to 21,648,400 pounds, representing a slight decrease below stocks on hand at the end of August which totaled 21,936,500 pounds. Stocks placed in cooperative storage, which, as already stated, amount to approximately 8,000,000 pounds, are not included in the foregoing totals.

Pulp Import Situation for 1938

A joint application filed by Japanese rayon producers for permission to import an additional 40,000 tons of pulp during the present year has been refused by the Ministry of Commerce and Industry, in accordance with the Government's recent policy of prohibiting or restricting all imports except those deemed urgently necessary, according to the local press. The Ministry's contention is that the supply of rayon pulp now on hand in the country should be adjusted between the various mills, since a few possess holdings sufficient for 6 months' operation, while some of the smaller mills have stocks that will permit them to operate for periods of less than a month. The Government's aim is to adjust pulp holdings so that all producers will have stocks sufficient for two months' operation.

During 1938 the Japan Rayon Producers' Association had intended to import 250,000 tons of rayon pulp but, in deference to the Government's efforts to minimize imports, this amount has now been reduced to 220,000 tons, the local press reports. Manufacturers of staple fiber find themselves in a similar situation and their original import estimate for 1938 of 180,000 tons of pulp is also expected to be reduced. Both rayon and

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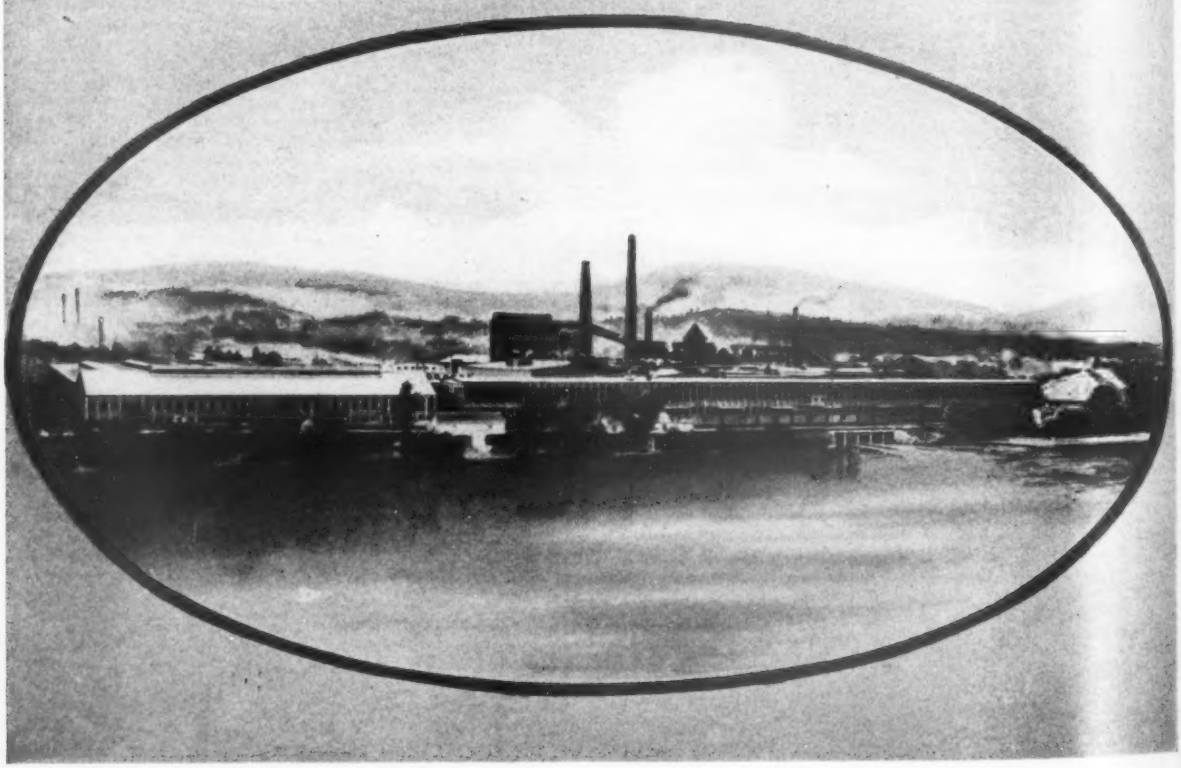

staple fiber producers are expressing concern that the limitation which is being placed on their importations of pulp will seriously affect the smooth operation of their production programs during the coming year.

Talk Self-Sufficiency

A plan has been formulated by the Ministry of Commerce and Industry to achieve self-sufficiency in pulp for Japan within five years by increasing pulp production in the Japanese Empire and Manchuria from the present annual total of approximately 1,000,000 tons to 1,800,000 tons. As this would improve Japan's international accounts and woud promote the staple fiber and other industries in the country utilizing pulp, the Minister of Finance is lending its support. However, the Japanese press reports that the possibility of putting the plan into effect in the near future has been considerably lessened by the strong opposition of the Ministry of Agriculture and Forestry and the Ministry of Overseas Affairs which argue that it will involve extensive cutting of Japan's limited timber reserves and will seriously retard the forestry program in Hokkaido and Karafuto.

Decree Requires Staple Fiber Mixture With Cotton and Wool

As a result of restrictions now being enforced in connection with the importation of raw cotton and wool, Japan's staple fiber industry is assuming increased importance. The local press states that production of staple fiber in Japan during the first half of 1937 was reported as 63,000,000 pounds and production for the last half of the year is estimated at 80,000,000 pounds. To meet the increased demand for staple fiber which is being used as a partial substitute for cotton and wool, plans are under way to enlarge the country's present daily production capacity of 250 tons to 1,000 tons.

Effective November 1, 1937, the Ministry of Commerce and Industry has decreed that, except where it is technically impossible or for goods entering the export trade, at least 10 per cent by weight of staple fiber must be used in the manufacture of woolen yarn and at least 20 per cent in the manufacture of woolen cloth. Staple fiber will also be used in the manufacture of muslin.

Japan's export trade in staple fiber products during September and the first nine month of 1937 is shown in the following table:

	September, 1937		Jan.-Sept., 1937	
	Quantity	Value (Yen)	Quantity	Value (Yen)
Staple fiber (in pounds)	465,352	251,333	14,506,587	7,826,633
Staple fiber yarn (in pounds)	687,181	655,302	5,805,783	5,456,552
Staple fiber textiles (in sq. yds.	2,399,349	1,029,313	10,112,702	4,322,243

American Consulate, Osaka, Oct. 25).

Japanese Pulp Imports Down

Rayon and staple fiber pulp imports into Japan during September 1937, declined to 22,710 metric tons valued at 6,129,962 yen from the August total of 28,172 metric tons valued at 7,646,866 yen. Imports of pulp for rayon and staple fiber manufacture according to country of origin during September and the first 9 months of 1937 follow:

Country.	Sept., 1937 — Metric Tons	Sept., 1937 — Value in Yen	Jan.-Sept., 1937 — Metric Tons	Jan.-Sept., 1937 — Value in Yen
Great Britain	50	19,247	259	79,654
Italy	.....	.....	103	26,732
Czechoslovakia	530	155,998	3,113	807,991
Finland	1,395	353,476	20,320	5,074,055
Sweden	2,877	783,923	28,446	7,352,417
Norway	3,744	1,033,058	39,555	10,639,448
United States	12,486	3,337,231	97,700	26,482,771
Canada	1,628	447,029	8,178	2,176,892
Total	22,710	6,129,962	197,674	52,639,960

German Progress in Waste Liquor Utilization

Under the pressure of the severe national shortage of foreign raw materials, Germany has been giving greatly increased attention to the utilization of all manner of waste and inferior grade materials, among others waste liquor occurring in the manufacture of sulphite pulp. The immense scope of hitherto little used waste material, which until recently has largely defied all efforts toward economic utilization, as indicated by the fact that based upon Germany's current production of some 1,400,000 metric tons of sulphite chemical pulp, there occurs a by product output of some 14,000,000 cubic meters of liquor. Owing to the technical progress achieved by recent intensified research work, the utilization of this vast amount of waste liquor has now entered upon an entirely new phase of development, with indications of much greater production of useful products from this hitherto neglected source. Although this new waste utilization development does not as yet offer marked profit attraction in all of its aspects for the operating pulp companies, it does offer a gain for the national economy through the increased domestic supply of vital raw materials.

Three main lines of research are now reported to offer the greatest promise of success in economic utilization of cellulose liquor, namely: ethyl alcohol; substitute tanning material partly replacing imports of tanning barks and extracts; and so-called sulphite soap, partly replacing fatty-acid contained in imported vegetable oils required in the manufacture of soap. In addition to these 3 major lines of technical progress now undergoing definite commercial development, experiments have shown the practicability of utilizing the waste liquor for obtaining various other subsidiary materials such as adhesives, textile finishing agents, binding materials for briquets, and for sand-molds used by iron foundries, and medicinal carbon. (American Consulate General, Frankfort-on-Main.)

German Staple Fiber Progress Noted

The progress of staple fiber in Germany was discussed in a recent supplement to the October 6 "Weekly Report of the German Institute for Business Research." The following comments are from the aforementioned article: "In the last year or so staple fiber has made great progress on its way to becoming a new and important textile raw material. Production and production capacity have been considerably increased in this period. At the same time, specialization in staple fiber production has started. Today a large number of different types are produced which are suited for various uses (clothing of all kinds, textile furnishings, technical and industrial purposes). This development will be even more strongly marked in the future. Staple fiber is also becoming of importance in exports.

"The production of staple fiber has increased greatly in recent years. The existing artificial silk factories have taken up the production of staple fiber to a great extent, and a number of new companies have been founded. In 1932, only 3,000 metric tons of staple fiber were produced in Germany. In 1934, production was 9,200 metric tons and by 1936 it had jumped to about 45,000 metric tons. The only 1937 production figure will probably be 90,000 to 100,000 metric tons. At the same time the fiber has been perfected, thus increasing its usefulness and considerably improving its quality.

"Just as with all 'new' raw materials or finished goods (whether aluminum or autos) the improvement in production methods and large-scale production after the surmounting of initial difficulties has brought reduction in the price of staple fiber. After the latest reduction (September 1, 1937) for Vistra from 1.60 reichsmark per kilogram to 1.45 reichsmark per kilogram, the present price for the most important standard staple fiber for use in the cotton industry is only about half the price prevailing in 1932 (2.45 reichsmark). (American Embassy, Berlin.)

(Note: Metric ton equals 2,204.6 pounds; current exchange value of reichsmark in the latter part of October approximated $0.402, United States currency.)

Swedish Labor Agreements Cancelled

The collective wage agreements governing the Swedish wood-pulp and paper industries and involving approximately 28,000 men were canceled by the workers on October 30, effective January 31, 1938. The workers will later specify their demands for revision of the existing agreements. Some minor wage contracts, involving a total of about 7,000 men, which expire on January 31, 1938, have also been canceled.

Rayon Production—
Yes, It Is Economically Feasible In the Pacific Northwest

PART II: Advantages and Disadvantages of the Pacific Northwest for Rayon Production—Advantages of Abundant Raw Material and Water, Cheap Fuel and Cheap Power, compared with the present location of the Rayon Industry, Cost of Labor and Proximity to Present Markets

by WILLIAM C. McINDOE, Industrial Chemist

AS a candidate for one or more units of the rayon industry's vast expansion program, the Pacific Northwest suffers from one real, but not insurmountable, disadvantage—that of the distance removed from the textile markets of New England, New York-New Jerssey, and Pennsylvania; but it applies only to the clothing field. Within the present year a new and potentially huge field of use for rayon has been opened—that of mechanical uses rather than textile; such as, the cords for high speed and heavy duty bus and truck tires and all of cotton's hitherto exclusive monopoly of the canvas, duck, and sheeting market. A very important part of this new market is much nearer at hand. The world's second largest rubber manufacturing center is located just outside of Los Angeles, California.

● The regional, or geographical, advantage in low cost of labor, formerly enjoyed by the rayon industry, due to its middle and south Atlantic location, has vanished since the middle of 1937. A combination of the codes of the N. R. A. of 1932, labor unrest and strikes since then has fostered this trend toward leveling-off in the cost of labor. At the time of completion and submission of my formal report, "The Economic Possibilities for Rayon Production in the Columbia River Area," June 1, 1937, to the War Department, Corps of Engineers, U. S. Army, Office of the Division Engineer, North Pacific Division, Portland, Oregon, the present location of the rayon industry still held a small advantage in labor cost over the Pacific Northwest; but the pendulum has now swung past to the Pacific Northwest's momentary favor. It should settle back to parity eventually.

In my preceding article, Pacific Pulp & Paper Industry, Vol. II, 26, November 1937, I established the facts that not only were the chemicals and raw materials available but at or below New York prices.

● The economic feasibility of rayon production in the Pacific Northwest is based on its enormous supplies of Western hemlock for rayon pulp, the additional almost unlimited potential supply of logging and sawmill wastes from Douglas fir for more pulp, the present high and increasing capacities of its pulp mills, and the very real advantages of aboundant supplies of good water, of cheap fuels and cheap electric power.

Western Hemlock

The existing stands of Western hemlock, growing along the Oregon and Washington Coasts, (and on up into British Columbia), in a narrow but dense belt 25-40 miles in width, from sea-level to about 1,500 feet elevation, were estimated in 1936 by the U. S. Forest Service to be 24,052,373,000 cu. ft. on an area of 2,740,522 acres. This survey includes all trees available for cutting, from 4" DBH., (diameter breast high), to over 20" DBH. The areas predominately Sitka spruce, balsam firs and mountain hemlock would swell the pulpwood totals considerably; but are not included here. The following table shows what all this means in the form of possible rayon pulp:

PULPWOOD STANDS AVAILABLE FOR CUTTING[1]

Region.	Western Oregon and Washington
Forest type:	W. hemlock (4" DBH to over 20" DBH)
Area in acres	2,740,522
Stand in cu. ft.	24,052,373,000
Stand: Cu. ft./acre	8,776.6
Total stand in cords*	279,678,800
Total stand: Cords/acre	102.05
Tons as pulp: (Basis 2 cords per ton pulp)	139,839,400

*Note: 86 cu. ft. = solid wood content of standard 4'x4'x8' cord of barked and peeled wood.[2]

● That 139,839,400 tons as available pulp is only that until you produce a "yardstick" for comparison to get at its real significance. For such a yardstick let us calculate the estimated amount of rayon wood pulp that was consumed in producing the estimated 1937 U. S. production of 325,000,000 pounds of rayon yarn plus the additional 20,000,000 pounds of staple fiber. Based on the reported production figures for the first half of 1937, 23.5% of the above 345,000,000 pounds was cellulose acetate, (made entirely from cotton linters as yet, so far as we know), and the remaining 76.5%, viscose and cuprammonium rayon combined. Now, since 1932 the cuprammonius process has hung on tenaceously to between three and four per cent of the world's production and was 3.5% of the U. S. production in 1936. Consequently, reducing the 76.5% by 3.5% to 73% should give a fair estimate for viscose production alone for 1937.[3]

$0.73 \times 345{,}000{,}000 = 251{,}850{,}000$ ponds of viscose for 1937. As the best authorities agree on a 30-70 blend of cotton linters and wood

pulp for raw material in the present day practice of the viscose rayon manufacturers,[4,5] therefore

0.7 × 251,850,000 = 176,295,000 pounds of the above viscose coming from the wood pulp. It usually requires 1.15 pounds of wood pulp per pound of rayon yarn produced, therefore

1.15 × 176,295,000=202,739,250 pounds of wood pulp were consumed in producing the 1937 U. S. viscose rayon total, or approximately **101,370 tons.** Here is our yardstick.

● Comparing the 101,370 tons of pulp consumed with the Pacific Northwest's 139,839,400 tons of Western hemlock available for cutting, it is evident that at the present consumption rate that supply can furnish the necessary pulp for more than 1,000 years.

And that isn' all. What about annual growth and reforestation? For Western hemlock the average annual growth rate can reach 178 cu. ft. per acre.[6] This rate is more than double those of other species suitable for rayon pulp. On a poundage basis, the annual growth figures for these recognized types become:

ANNUAL GROWTH PULP YIELDS*

Cotton linters	16 lbs./acre[8]
Southern slash pine	1,000 lbs./acre[7]
Spruce (N.E. and Canada)	1,000 lbs./acre[7]
Western hemlock	2,100 lbs.acre

*Basis: 86 cu. ft./cord; 2 cords/ton pulp.

● Since the fast growing Western hemlock amounts to approximately 61.5% of the present available pulp species in the Pacific Northwest, and it is logical to expect it to persist in at least this percentage in any forest program for sustained yield, this figure is used in estimating the current, realizable and potential annual growth of Western hemlock separate from the total data for all pulp species reported by the U. S. Forest Service.[1]

● Thus the annual growth for the Pacific Northwest is estimated to be:

Current annual growth—
944,000 tons of pulp,
Realizable mean—
822,500 tons of pulp,
Potential growth—
3,046,500 tons of pulp.

Notice that the current annual growth of Western hemlock is nine times the 1937 U. S. pulp consumption while the potential annual growth is 30 times.

Douglas Fir—Logging and Sawmill Wastes

A November, 1937, news item, that the University of Washington received a government grant to study the possibility of producing high cellulose content and rayon pulps from Douglas fir, focussed attention on that species as a potential source of pulp. Since Douglas fir is our main source of lumber, it is only the logging and sawmill wastes that would be used for pulping purposes. The 1926-27 yearly accumulation of woods, or logging, wastes amounted to about 4,000,000 cords of sound wood, cordwood size and up, half classified as saw-logs; the rest, slashings.[9,10] At two cords per ton of pulp this source of pulp might yield 2,000,000 tons annually.

● Similarly, mill waste and low grade lumber (as chips) amount to about 3,400,000 units, (1 unit=200 cu. ft.), annually in 1927.[11] That which isn't used for hogged fuel can be converted to pulp at the rate of approximately 2 units of chips per ton of pulp. Therefore this potential supply of Douglas fir waste should produce 1,700,000 tons of pulp per year.

Cheap Industrial Fuels

The cost of industrial fuels is calculated on the basis of the cost of generating steam with the fuels in question. Transportation charges against the fuels are vital considerations in plant location. The rayon industry established its plants along the back-bone of the Allegheny Mountains from about Pennsylvania to Georgia, within a $1.50 per ton freight rate for their coal supplies.

● Coal is not an item, however, here in the Pacific Northwest; because, instead of coal, fuel oil and hogged fuel, (wood chips and sawdust), are the fuels in common use. Transportation charges against these fuels reflect strongly on the cost of steam generation. However, most of the available plant sites in the Pacific Northwest are within reasonable distances of sources of fuel supplies; a great number are on tide water, affording cheap barging deliveries for both oil and hogged fuel; and a satisfactory number of sites are close to pulp and sawmills, which produce the extremely cheap hogged fuel.

● In order to demonstrate our very real western advantage of cheap fuels, let me calculate the cost of 1,000 pounds of steam (calculated to 1,000 B.T.U. per pound), or the cost of 1,000,000 B.T.U. as steam, for an hypothetical rayon plant site in the Columbia River Basin within a zone of influence of Bonneville Dam, (100-mile radius). For this Columbia River Area the posted price of fuel oil per barrel was $1.15 f.o.b. the tank farm at Linnton, Oregon, (northwest Portland), while that for hogged fuel was about $0.75 per unit (200 cu. ft.), f.o.b. the sawmill on June 1, 1937. To obtain the laid-down-at-the-plant costs the respective barging costs of approximately $0.10 per barrel for oil and $0.75 per unit for the hogged fuel must be added to the above f.o.b. prices; thus obtaining $1.25 per barrel for oil and $1.50 per unit for hogged fuel.

● The following assumptions are used in these calculations: the 16.0° A.P.L. grade industrial fuel oil customarily used locally contains 18,500 B.T.U. per, or 6,200,000 B.T.U. per barrel; the average efficiency of oil-fired boilers is about 78% over-all; a unit of hogged fuel contains 19,000,000 B.T.U. in round numbers; and a 60% over-all efficiency is a safe estimate for boilers using hogged fuel alone.

Since, in many cases, the local mills are equipped to burn both of the above fuels, burning the oil in cases of emergency, calculations are included for an entirely arbitrary 50-50 mixed fuel; i. e., generating 500 pounds of steam with hogged fuel and the remaining 500 with fuel oil. For the sake of comparison, eastern costs using coal are given in a separate tabulation.

Current, Realizable and Potential Annual Growth, Western Hemlock

Region.	ANNUAL GROWTH					
	Current		Realizable Mean		Potential*	
	Million Cu. Ft.	M. Cords	Million Cu. Ft.	M. Cords	Million Cu. Ft.	M. Cords
Total: Pacific N. W.	162	1,888	141	1,645	524	6,093
Washington	106	1,237	97	1,130	362	4,212
Oregon	56	651	44	515	162	1,881

*Based on 75% normal stocking; all commercial forest land under intensive forest management, with all virgin timber cut and restocked.

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PAPER

Cost of Fuel for 1,000 Pounds Steam (Calculated to 1,000 B.T.U. Per Pound), In the Pacific Northwest as of June 1, 1937[12]

Fuel.	Posted Price	Barging Cost	Cost Laid Down at Plant	Heating Value of Fuel	Boiler Eff.	B.T.U. Available per Unit	Cost of Fuel per 1000 lbs. Steam
				(B.T.U.)	(%)		
Oil	$1.15 per Bbl.	$0.10 per Bbl.	$1.25	6,200,000 per Bbl.	78	4,836,000 per Bbl.	$0.2588
Hogged Fuel	$0.75 unit	$0.75 unit	$1.50	19,000,000 per unit	60	11,400,000 per unit	$0.1315
50-50 Mix (Calc.)	.....	.....	.....	.....	69	.....	$0.1951

• To show very definitely the Pacific Northwest's advantage over several of the present plant locations of the rayon industry, the cost of process steam has been calculated for a rayon plant of 5,000 tons rayon yarn capacity per year, (an average size plant), situated at Vancouver, Washington, one of many excellent plant sites. This data has been calculated for both of the major processes, viscose and cellulose acetate.

The rayon plant locationss chosen to represent the Atlantic Coast side of the comparison are: Buffalo, N. Y., Cleveland, Ohio, and Richmond, Virginia.

• Only in the two instances of oil versus coal for Cleveland, Ohio, and Richmond, Virginia, for the viscose process does the Atlantic Coast enjoy cheaper steam and then the advantages per year are only $1,452 and $12,670 respectively.

•

Comparative Process Steam Cost Estimates for Rayon Plant
(5,000 tons Yarn per Year Capacity)[12]

	PACIFIC NORTHWEST (Vancouver, Wash.)		ATLANTIC COAST	
	Viscose	Acetate	Viscose	Acetate
Process require—				
Steam: Lbs./lb. Yarn	70	124	70	124
Lbs./year	700,000,000	1,240,000,000	700,000,000	1,240,000,000
B.T.U. in millions (Basis: 1 lb. St.=1000 B.T.U.)	700,000	1,240,000	700,000	1,240,000
Available B.T.U.				
Coal/per ton: (12000 B.T.U./Lb. 65% B. Eff.)	(Not used)		15,600,000	
Oil per barrel (18500 B.T.U./Lb. 78% B. Eff.)	4,835,890		(Not used)	
Hogged fuel/unit (19,000,000 B.T.U./ unit; 60% B. Eff.)	11,400,000		(Not used)	
Estimated Steam Costs:				
Coal:				
Tons			44,872	79,487
Buffalo, N. Y.*			$206,410	$365,641
Cleveland, O.*			$179,487	$317,949
Richmond, Va.*			$168,269	$298,077
Oil**				
Barrels	144,751	235,737		
$1.15 Linnton	$180,939	$294,672		
+ $0.10 Barg.				
Hogged Fuel:				
Units	61,404	108,772		
$0.75/unit	$92,105	$163,158		
+ $0.75 Barg.				
50-50 Oil***				
Hogged Fuel:				
Maximum Cost	$136,522	$228,915		
Minimum Cost	$106,258	$176,338		

NOTES: *Buffalo, $4.60; Cleveland, $4.00; Richmond, $3.75, actual cost of coal laid down at plant, Cf. Edison Electrical Institute, 1936 Rate Book.
**Columbia River prices, June 1, 1937.
***Maximum includes Barging Cost; minimum without.

All of the other combinations for both processes favor the Pacific Northwest strongly in yearly advantages ranging from $3,405 to $202,483.

Cheap Electric Power

(1) Utilities

The three major public utilities serving the Lower Columbia River Basin and the northern portion of the Willamette Valley are: the Portland General Electric Company, (City of Portland, and Yamhill, Polk, Marion, Clackamas, Multnomah, Washington and Columbia counties in Oregon); Northwestern Electric Company, (City of Portland, and the following southwestern counties of Washington: Cowlitz, Clark, Skamania, and Klickitat); and Pacific Power and Light Company in Klickitat county, Washington, and Hood River county, Oregon, for its western boundaries.

• These three utilities together had in 1935 an annual output capacity of 1,305 million Kwh., made up of both steam generated and hydroelectric power. There has been considerable expansion since 1935, and still more possible.

(2) Bonneville Dam

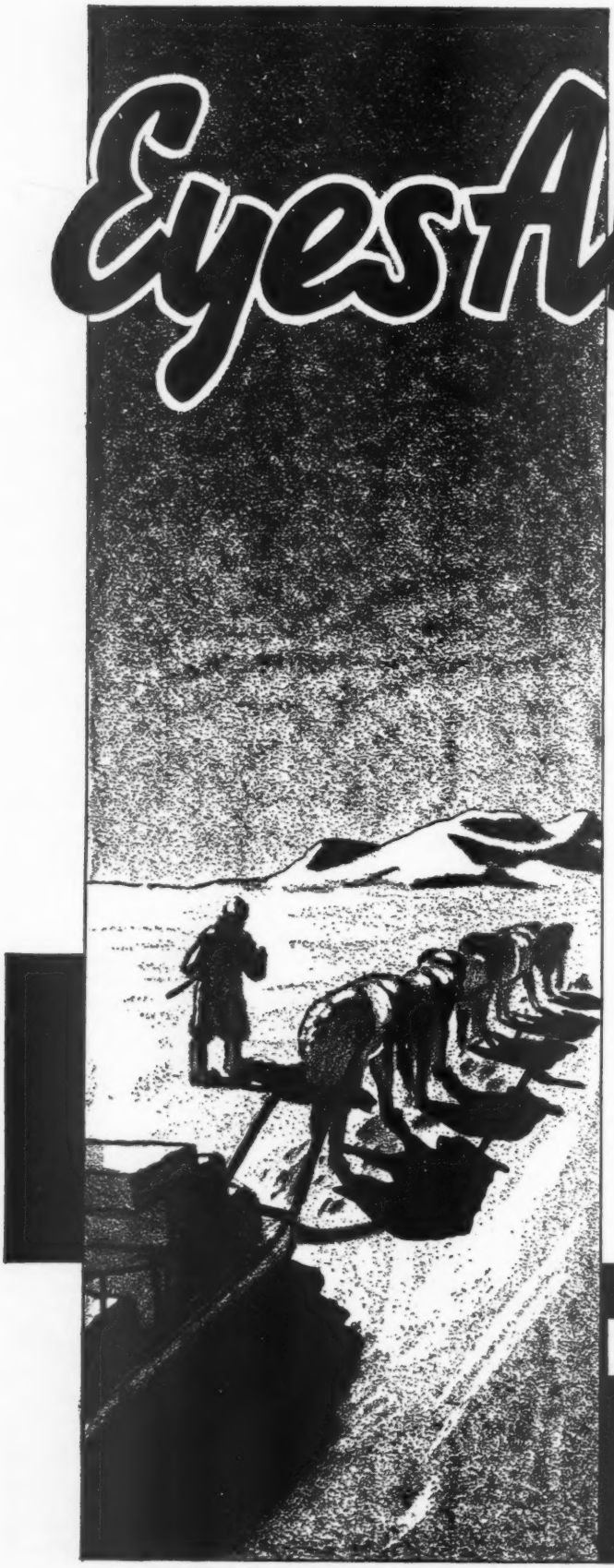
The hydroelectric generators installed at Bonneville Dam by the Corps of Engineers, U. S. Army, for the Government will consist eventually of ten units of 43,200 Kw. each, for an annual total firm power of 2,720 million Kwh., plus 1,480 million Kwh. more of secondary power. These units will be installed in groups of two as needed. The first two units are expected to be ready to operate early in 1938 and will generate 757 million Kwh. annually at 100% load factor.

Rates

Both the Portland General Electric Company and the Northwestern Electric Company in June, 1937, had an existing rate of $27.00 per horse-power year for a base load of 3,000 Kw. (4,000 h.p.), which is 4.84 mills per Kwh. at 85% load factor. In addition, having hydroelectric plants, the Northwestern Electric Company has some seasonal cheaper dump power.

• No definite rates have been announced publicly yet by J. D. Ross, Bonneville Administrator; but, by comparison with the 1.63 mills per Kwh. contracts for falling water, whether used or not, between Boulder Dam, Colorado, and southern California utilities, it seems fair to

Eyes Ahead



To know about the unknown, one must explore the unknown.

This philosophy is in the blood of the fur-clad pioneer who mushes over arctic wastes . . . of the scientist peering into rows of test tubes...of the manufacturer interested in developing new and better products.

Extensive experimental work has enabled Black-Clawson and Shartle to improve paper mill equipment more than any other organization. Tugboat Annie, Mr. Rotobeater, Barnacle Bill, B-C wet-ends, and vertical dryers are only a few of their many important contributions.

BLACK-CLAWSON and SHARTLE BROS.

estimate the Bonneville switchboard rates at 1.5 mills per Kwh. for firm power and 0.5 mill per Kwh. for dump power.

Advantage of the Pacific Northwest

Even depending entirely upon existing rates of the public utilities already in the field, the Pacific Northwest can offer sizeable advantages in cheap power over the present plant locations of the rayon industry. Bringing even cheaper Bonneville Dam power into the bargain more than doubles that advantage. In tabular form, using the same hypothetical 5,000 tons rayon yarn per year plant at Vancouver, Washington, and assuming that for that plant location firm Bonneville power will cost 2.0 mills per Kwh., including an estimated 0.5 mill per Kwh., transmission charge, this far western advantage becomes:

• Nowhere among the combinations cited and calculated in the above table do the Atlantic Coast plants come anywhere near to being in the running with the Pacific Northwest, whether the electric power be purchased from public utilities, or from some Government hydroelectric development. The latter's annual advantage ranges from $23,247 to $157,941.

In a later article I plan to refer back to these very encouraging Pacific Northwest industrial advantages, when I can use them to finance the transportation of additional tonnage of yarn to existing eastern markets.

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[11] Utilization of Sawmill Waste for the Manufacture of Wood Pulp, by Colonel W. B. Greeley, Sec.-Manager, West Coast Lumbermen's Association, Ibid, pages 46-49.

[12] Economic Possibilities for Rayon Production in the Columbia River Area, by William C. McIndoe, Industrial Chemist, War Department, Corps of Engineers, U. S. Army, Office of the Division Engineer, North Pacific Division, Portland, Oregon, June 1, 1937 (not yet released for publication).

Comparative Cost of Purchased Power—Estimates for Rayon Plant
5,000 Tons Yarn Per Year Capacity[12]

Basis of Calculations	PACIFIC NORTHWEST (Vancouver, Wash.)		ATLANTIC COAST	
	Viscose	Acetate	Viscose	Acetate
Process Requirements:				
Kwh. per Lb. yarn	2.723 (a)	2.6	2.723	2.6
Power used/year, Kwh. (Continuous demand at 85% L.F.)	27,230,000	26,000,000	27,230,000	26,000,000
Continuous demand, Kw.	3,108	2,968	3,108	2,968
Max. demand, Kwh./yr.	32,035,300	30,588,200	32,035,300	30,588,200
Max. demand, Kw.	3,657	3,492	3,657	3,492
Max. demand, H.P.	4,876	4,656	4,876	4,656
Unit Power Rates:				
Steam generation:				
Vancouver, Wash.	$27.00 per H.P. year (b)			
Mills/Kwh., 85% L.F.	4.84			
Buffalo, N. Y.			$38.54 per H.P. year (c)	
Mills/Kwh.			5.87	
Cleveland, Ohio			$45.55 per H.P. year (c)	
Mills/Kwh.			6.93	
Richmond, Va.			$44.15 per H.P. year (c)	
Mills/Kwh.			6.82	
Hydroelectric:				
Bonneville Dam	2.0 mills/Kwh. (est.)			
Niagara Falls (Buffalo)			5.6 mills/Kwh. (d)	
Yearly Plant Power Cost, billed at 85% L.F.				
Vancouver, Wn.:				
Steam	$155,051	$148,047		
Hydro	$ 64,071	$ 61,176		
Buffalo, N. Y.:				
Steam			$188,053	$179,525
Hydro			$179,398	$171,294
Cleveland, O.: Steam			$222,012	$211,976
Richmond, Va.: Steam			$218,488	$208,611

NOTES:

(a) Average of 6 actual plants: 5 reporting in Rayon Handbook, 2nd Edition, 1936; 1, by private communication.

(b) Schedule IP-47, Northwestern Electric Co., Portland, Oregon.

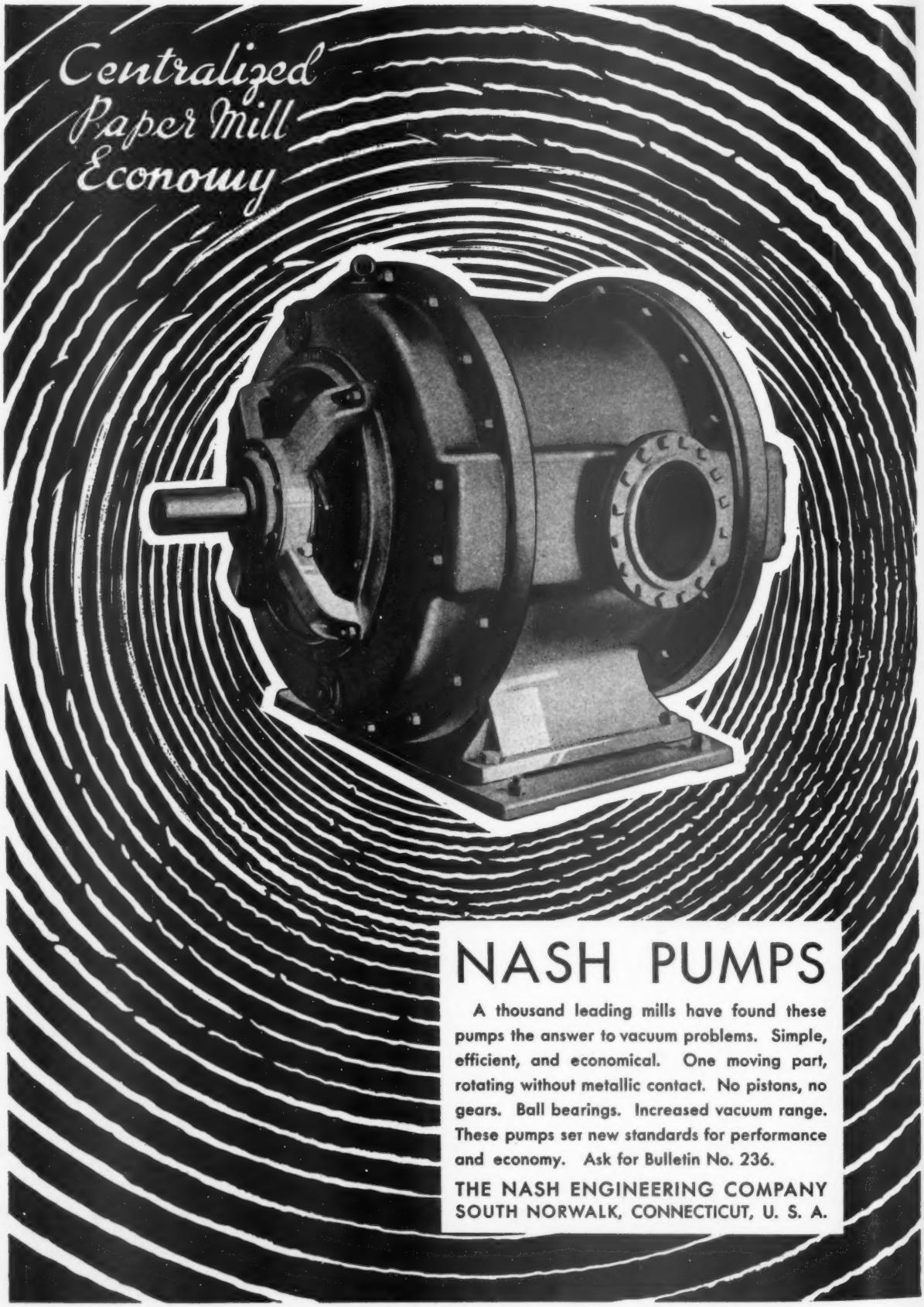
(c) Calculated from 1936 Rate Book, Edison Electrical Institute.

(d) Niagara Electric Service Corp., page 123, Electric Rate Survey, Rate Series No. 4, 1936, Federal Power Commission.

POSITION WANTED

as superintendent or assistant superintendent by paper mill superintendent with 30 years' experience in the manufacture of book, bond, label and other high grade papers.

Address reply to Box No. 17, Pacific Pulp & Paper Industry, 71 Columbia St., Seattle, Washington.



NASH PUMPS

A thousand leading mills have found these pumps the answer to vacuum problems. Simple, efficient, and economical. One moving part, rotating without metallic contact. No pistons, no gears. Ball bearings. Increased vacuum range. These pumps set new standards for performance and economy. Ask for Bulletin No. 236.

THE NASH ENGINEERING COMPANY
SOUTH NORWALK, CONNECTICUT, U. S. A.

Intelligent Forest Management Will Repay the Pulp Industry

Continued growth of the Pacific Northwest pulp and paper industry carries with it an increasing share of the responsibilities for perpetuating the timber supply through scientific management

By BRUCE E. HOFFMAN*

THE very rapid strides made in the development of the pulp industry in Oregon and Washington during the past several years have brought out strikingly the importance of the certain forest resources of these two states. The situation would indicate that it might be advisable for the pulp industry and all those interested in it to pause and survey the extent and character of the resources and give serious consideration to the sustaining of these supplies in the future.

One very important justification for the growth of the industry here is apparently that special qualities are found in certain species of trees such as Western hemlock, the balsam firs, and Sitka spruce.

In considering the needs for the future supplies of raw material it is assumed that cheapness is one of the prime requisites in order that the industry may successfully maintain large proportions and compete with other regions such as the south, and foreign countries.

● Things to be taken into consideration in this respect are:

1. The utilization of our present mature stands of pulp species.
2. The ease and rapidity of reproducing the above species.
3. Quality of wood as present in different species, and quality of wood as influenced by soil, climatic, and other natural factors.
4. Ease of conversion into pulp.

Up to the present time by far the larger portion of our pulp wood raw material in this Region has been obtained from the logging operations at large, mostly as a by-product to the logging of Douglas fir, cedar, etc., for saw timber purposes. Considerable quantities, of course, can be obtained in this incidental process for many years in the future. However, most anyone familiar with the logging industry of the State of Washington and in Northwestern Oregon realizes that the fine stands of large Douglas fir saw timber in the vicinity of the principal harbors and rivers in that area are not as plentiful as they were thirty years ago.

Logging for lumber purposes has moved back well toward the higher elevations in most places. Consequently there is indicated in this situation the transition from lumber industry to pulp industry.

Future developments no doubt will indicate expansions in the production of pulp in this Region with an integrated lumber industry, perhaps with much greater refinement in the character of its products locally than now exists.

● Although we still have large quantities of pulp materials in the virgin stands, it would appear wise for those interested in the future welfare of the state, the owners of industries, and particularly the technicians and chemists of the pulp industry, to make plans for the future perpetuation of the more valuable resources in order that the essential basic payroll industries may be maintained.

Though the Region will no doubt always produce considerable quantities of the more valuable pulp woods in mixed stands, there appear to be very logical reasons to assume that major quantities of needed raw materials can best be produced on the rich sites and under favorable conditions of climate and transportation in the so-called rainy belt along the coast line.

The areas particularly referred to are now under pure types of pulp species—hemlock, balsam firs, and spruce—from Tillamook County, Oregon, north along the coast through Pacific County, western Grays Harbor County, western Jefferson and Clallam Counties in Washington. For example, one can pick out of this particular area in western Washington about one and one-half million acres of the prime pulp producing lands which, because of their good sites and close proximity to water transportation, should be invaluable for the growing of future crops of pulp timber.

● Extensive areas of good pulp growing land also lie in the Cascade slopes. However, they are more broken, lie at higher altitudes, and are not altogether as susceptible of large scale production under simple management systems as are the extensive, pure stands along the coast heretofore mentioned.

The forester is far behind the scientist in the manufacturing phase of the pulp industry. With an abundance of raw material, there has been no emergency pressure for the adoption of intensive practices in the growing of wood crops. But in the future, in order that large supplies of raw materials may be produced, the operator must devise and test out cutting systems, types of machinery, and operating methods which will bring high grade raw material to the plant at the lowest possible cost. It is indeed fortunate that extensive areas of land suitable for the growing of pulp timber crops do exist because they will be needed if the Northwest pulp industry is to grow and become permanent. They cannot be expected to yield large crops, however, unless scientific methods are applied to their management.

Given an excellent empire for the growing of abundant timber crops, the forestry problem is still more than the development of proper cutting systems and regenerative meth-

*Senior Forester, U. S. Forest Service, Portland, Oregon. Outline of talk presented at the Dinner Meeting of the Pacific Section of TAPPI, Port Angeles, Washington, November 9, 1937.

ods. Problems of ownership are not altogether simple. Economic and political questions complicate the determination of how much forest land the public should own and what should be held privately. Public ownership of large long term supplies of timber appears to be a necessity to help the operator in meeting the heavy burden of carrying charges under private ownership. Large public timber reserves are therefore of future importance to the industry.

● Further than this, private forestry undertaking needs public cooperation in the adjustment of taxation, strengthening of fire protection, certain forms of research, and possibly the development of long term financing at reasonable rates.

All of these things cannot be brought about over night, nor in a year because of the many complex factors which govern them. The solution of the more important problems requires first, a thorough enlightenment of the public in regard to the importance of the natural resources and the extent to which they contribute to human welfare, not only locally, but in the country at large. Leadership must be taken by those who are best informed and by such organizations as TAPPI who, as indicated by the rapid progress made in the manufacture of pulp, can readily appreciate the need to provide for adequate supplies of raw material.

O, Papermaker!

In the latest issue, the Packaging Number, of "The Paper Maker," appeared the "Saga of an ear of corn, a pig, and a paper maker." The genius who created it remains anonymous, unfortunately. Here it is with acknowledgements to "The Paper Maker," published by the Paper Makers Chemical Division of the Hercules Powder Company.

"Corn into meal,
Meal in boxes . . .
Corn into starch,
Starch in boxes . . .
Corn into flakes,
Flakes in boxes . . .
Paperboard boxes!
Corn into hominy,
Hominy in cans . . .
Corn into syrup,
Syrup in cans,
Labels on cans . . .

O, HAPPY PAPERMAKER!

Corn into pigs,
Pigs into hams . . .
Pigs into bacon, pigs' feet, and sausages . . .
Hams, bacon, pigs' feet, and sausages in packages, pails, jars and cans . . .
Paper for packages and labels.

O, TWICE-HAPPY PAPERMAKER!

Corn into Bourbon,
Bourbon in Bottles . . .
Labels on bottles . . .
Bourbon in papermaker . . .

O, PAPERMAKER!"

Kamyr Men Visit Coast

A. H. Lundberg of Seattle was host the middle of November to Johan Richter of the A. B. Kamyr of Oslo, Norway and to Leif Glorsen of A. B. Kamyr of Karhula, Finland. Their visit was a short one lasting but two days.

Widman Has Eight Pound Son

News doesn't always get out of Port Angeles on schedule and so our vital statistics department is a bit late in reporting that N. T. Widman of the Rayonier Incorporated, Port Angeles Division, is the father of a eight pound four ounce son named Robert Buring Widman. The youngster is now about twelve pounds in weight having grown rapidly since his birth September 24th.

Announcing . . .

that the assets of SHIBLEY COMPANY, Inc.

Have Been Acquired By

William R. Gibson

who will continue the business with the same organization under the name of

Northwest Filter Company

at 1201 Textile Tower, Seattle – Seneca 0366

where we hope for a continuance of your valued patronage

Water Treatment Headquarters

PACIFIC COAST pulp and paper mills meet the Quality Standards of today with the aid of clean, pure, filtered water. Modern filtration and treatment plants provide a continuous supply of water, free from dirt color and slime producing bacteria.

WATER SOFTENERS and ALL FORMS OF PRESSURE FILTERS, GRAVITY FILTERS, WATER PURIFICATION

STOP Boiler Scale –
Corrosion –
Embrittlement –

The HALL SYSTEM of Boiler Water Conditioning will keep your boilers free from scale, protect them from corrosion and guard them against embrittlement. We are licensed to sell and service HALL SYSTEM in the Pacific Northwest.

REPRESENTING—Bristol Company, Instruments and Control Equipment—Builders Iron Foundry, Venturi Meters and Control Equipment—Calgon, Inc—Hagan Corporation, Combustion Control—Hall Laboratories, Inc., Boiler Water Treatment—Iowa Valve Company—The Buromin Company—Wallace & Tiernan, Chlorine Control Apparatus.

Willson New BM&T Manager at San Jose

Floyd L. Willson has been named manager of the San Jose division of Blake-Moffitt & Towne, paper jobbers, to succeed Arthur W. Peterson, deceased. Mr. Willson was born in Oklahoma, raised in Fresno and later went with Melvin Roberts Harworth, San Jose, selling paper and stationery. Nine years ago he joined Blake, Moffit & Towne and three years ago took over the specialty sales work along the coast for Sylphwrap cellophane, manufactured by the Sylvania Industrial Corporation and distributed by BM&T. His experience in handling Sylphwarp fruit wraps will be valuable to him in his new post in the metropolis of the Santa Clara valley fruit-raising section.

L. A. Paper Men Hold Dinner

A social meeting of the Paper Mill Men's Club of Southern California was held November 23 at the Cafe de Paree in Los Angeles. Twenty-five were in attendance at the dinner including two guests from out of town, G. J. Ticoulet and Walter Goodman. A committee was appointed to supervise and organize the Christmas Party which the Club gives each year for a group of underprivileged boys. The committee appointed was Louis Mork, chairman, Ken Ross and Louis Wanka. The dinner was followed by card games.

Zellerbach Men Send Christmas Greetings

A double-page center-spread of holiday greetings to Zellerbach Paper Company folks is contained in the firm's December house organ, "Informant,," edited by Victor E. Hecht with Glory M. Palm as assistant.

Signators are:

A. W. Akers, Jr., Seattle.
D. J. Crikelair, Phoenix.
Ernest Ferris, San Diego.
L. J. Doherty, Sacramento.
J. C. Ady, Oakland.
Wm. G. Lamber, Salt Lake City.
P. K. Holland, Los Angeles.
H. J. Gassett, San Jose.
W. D. McWaters, Portland.
J. R. Hughes, Reno.
A. R. Kuhn, Fresno.
Albert G. Mohn, Spokane.
F. C. Stratford, San Francisco.
Ralph F. Lane, Kansas City.
Harry B. Todd, Chicago.
J. L. Taylor, Stockton.

These are division managers and sales department heads.

Hollywood Paper Company Established

The Hollywood Paper Company, a new southern California paper jobber, is now operating at 8431 Melrose Place, Los Angeles. The officers of the firm are J. D. Knauft, pres., R. M. Brooks, vice-pres., and E. A. Slater, secy.-treas. The firm was first organized in March. They carry a complete line of wrapping papers and are the manufacturers of Quickseal shirtbands. Mr. Slater was formerly in the paper business in Pennsylvania. Mr. Knauft and Mr. Brooks were connected previously with Blake, Moffit and Towne and also were the representatives for the Thomas M. Royal Bag Company.

Burnham Sees New Use for Napkins

A new use for paper napkins has been noticed by Harry T. Burnham, resident manager of the Oakland branch of the Brown Paper Goods Co. of California., the head office of which is in Los Angeles.

Mr. Burnham says he has seen gasoline station attendants use white paper napkins, instead of soiled rags, to wipe off the oil guages of cars they are servicing. Dirt in oil shows up better on the white paper than on the rags and makes for more oil changes in automobiles. Drivers can be sold new oil when the white paper shows the old oil to be dirty.

Brown Paper Goods Company makes paper napkins, specialty bags and glassine bags.

Kelly Sales Manager of General Paper

R. L. Kelly, new sales manager of the Los Angeles division of the General Paper Company, announced that Pom Myers, formerly representing the company in Long Beach, has been appointed sales manager of the wrapping paper department in the Los Angeles office. Lou H. Wilson resigned from the post now held by Mr. Myers.

Corcoran Acquires Long Beach Paper Co.

T. P. Corcoran, head of the Corcoran Paper Company of Los Angeles, announced that his firm had taken over the Long Beach Paper Company of Long Beach. The firm will be operated under the name of the Corcoran Paper Company and will be managed as a branch by Milton Corcoran, brother of T. P. Corcoran. The bulk of the business done in this office is in roofing paper.

Gus Johnson Joins Zellerbach

Gus Johnson is back in the paper game in San Francisco!

This interesting piece of news was contained in a formal announcement this month from the Zellerbach Paper Company, stating it took pleasure in advising the trade "of the appointment of Mr. Augustus Johnson as a member of our sales promotion staff."

"We believe," the announcement continued, "that Mr. Johnson's long and varied experience in the paper industry will prove of real value to our customers."

Gus Johnson for years was the San Francisco representative of the Everett Pulp & Paper Company and was secretary of that firm. Later he was a mill representative. For years Gus was chairman of the paper manufacturers' committee in charge of the golf tournament staged by the mill men at the Pacific States Paper Trade Association Conventions at Del Monte.

Mr. Johnson is working on sales in San Francisco.

Mr. Johnson has been in the paper business 42 years and spent 38 years with the Everett Pulp & Paper Company. He has been selling paper to the Zellerbach Paper Company all these years and as he says, "always got along fine and thought them a high class house."

Expan Company to Rebuild After Fire

The Expan Company of Redlands, Calif., is gradually rebuilding its production equipment which was destroyed in a fire February 2, 1935. All dies and machinery were destroyed in this fire requiring a complete remanufacturing of all manufacturing equipment, all of it specially made for this particular business. This has caused the delay in rebuilding the production department. The Expan Company manufactures paper plant covers which are wired and made of glassine and sulphite papers. The new eqquipment when completed will have double the capacity of the old. The plant is expected to be ready for production in late spring of next year. J. P. Gregg is president and owner of the firm.

Los Angeles Conference Moves

The Paper Trades Conference of Southern California moved its offices to a new location early in December. The new headquarters are at 206 South Spring street, Los Angeles.

Paper Mill Men's Club Plans Party for Boys

The Christmas Party Committee of the Paper Mill Men's Club of Southern California announced that the party will be held December 22 at the Jonathan Club in Los Angeles. Dinner will be served at noon and twenty-five underprivileged boys will be guests of the club at a regular old fashioned Christmas dinner.

A surprise feature of the day will be a talk by Reginald Denny, screen star of the silent days, who now operates a model building store in Hollywood and who will present each boy with materials to build a flying model plane 32 inches long. He will have on exhibition a large model gasoline engine powered airplane. A movie of the Pacific Motor Boat Trophy Speedboat Championship Race will be shown also.

The boys are selected by Carroll A. Stewart, director of the Juvenile Division of the Probation Department of Los Angeles County. The boys are not delinquents but are merely underprivileged and under the direction of the Probation Department. Gifts will be given to each boy including one serviceable piece of clothing. George Wieman will be master of ceremonies.

Kleiber Wont Quit Work

Fred Severance worked for the Zellerbach Paper Company for 35 years at San Francisco, first as a salesman and then at the information desk on the main floor at the firm's headquarters building. Fred died recently and Frank Kleiber was transferred from the elevator to the information desk. Frank is past 80 years old and is a veteran of the Franco-Prussian war. The Zellerbach folks wanted to retire Frank on a pension but he wouldn't stay home.

Murray In Chicago

J. L. Murray of San Francisco, sales manager for the Everett Pulp & Paper Company, was in Chicago in December.

Zellerbach Service Pins

George Holloway, head cutter at the Zellerbach Paper Co., San Francisco, recently received a 35-year service pin.

Oldest pin is that held by I. Zellerbach, father of Harold Zellerbach, president of the company. Mr. Zellerbach has a 45-year pin and it won't be long before he rates his 50th.

Paul Butler Visits on Coast

Paul Butler of the Butler Paper Company of Chicago flew to the coast in his own plane to spend Thanksgiving with friends in Santa Barbara. He returned by way of San Francisco.

Mrs. Fred French Passes Away

The many friends of Fred H. French regretted to hear that his wife, Mrs. Mary A. French, passed away in Los Angeles, on November 21. Mrs. French had been a resident of southern California for the past 22 years. As well as her husband, she is survived by two daughters and a son, Oliver, who is associated with his father in the Fred H. French Paper Co., and four grandchildren.

Arthur Petersen Dies While Hunting

On Monday, November 15, Arthur W. Petersen, manager of the San Jose division of Blake, Moffitt & Towne, died of a heart attack at Willows, Calif. Apparently in the best of health and having enjoyed a week-end of hunting, he was returning home when the attack occurred. His many friends and associates in the paper and printing fields were shocked by the news of his sudden passing.

Petersen's connection with Blake, Moffitt & Towne began in 1930 at the Oakland division and just eight months ago he was appointed manager of the San Jose house. His 18 years' experience in the paper business began in 1919 when he joined a local paper house in Sacramento, Calif., where he later held an executive position prior to joining Blake, Moffitt & Towne.

Petersen was 42 years of age and was a native of Illinois, having been born in Chicago. He attended Heidelburg University at Tiffin, Ohio, and when the U. S. Entered the World War he went overseas with the Marine Corps where he saw active service.

Outside of business, his chief interest was his home and the outdoor life of hunting and fishing. He leaves a widow and four children. Funeral services conducted at San Francisco on the 18th of November, followed by a military funeral at the Presidio Chapel, San Francisco, were attended by a large group of friends and associates.

BM&T Plan Los Angeles Conference

Blake, Moffitt & Towne, southern division, according to W. W. Huelat division manager, will hold a three day intensive sales conference for all its men between the Christmas and New Year's holidays at the Los Angeles office. Representatives will be in attendance from the Arizona territory. The meeting will be under the direction of R. R. Whiteman, manager of the wrapping paper department and T. M. Denison, manager of the printing paper department.

News Print Market On Sounder Basis

William Barclay, manager of the Powell River Sales Company, selling unit of Powell River Company, has returned from a business trip to Honolulu and has now gone to California for a fortnight to confer with consumers of British Columbia newsprint and his company's agents.

Mr. Barclay reports the newsprint market generally firm, with prospects improving since eastern companies have taken a firm stand on the price issue. With $50 a ton assured, executives of Powell River Company and Pacific Mills, Ltd., the two big British Columbia newsprint manufacturers, feel that the industry will be on a sounder footing even though advance in cost of materials, labor and equipment since the first of this year will offset much of the gain that was anticipated when an increase in the price of newsprint was announced last summer.

Two Out of the Four Coltons

Not long ago **Pacific Pulp & Paper Industry** asked Louis A. Colton for a picture of himself and his three sons—all in the paper business at San Francisco.

Louie submitted the picture shown herewith, saying, "I can make delivery of but 50 per cent of your order. This photograph was taken in the residence of my son, Arthur H. and shows, on the left, Joseph A. Colton, for five years a salesman for the General Paper Company, San Francisco, and, on the right, Arthur H. Colton, for eight years northern California representative of the Western Paper Converting Company, with offices in the Russ Building.

"While this picture is the work of an amateur—myself—Father Colton—it is a mighty fine likeness of the two boys."

Proud Father Colton is vice-president and director of purchases of the Zellerbach Paper Company.

The third son—Edgar—is with Zellerbach Paper Company at San Francisco.

HALF of the COLTON'S in the paper business » » » JOSEPH A. COLTON at the left and ARTHUR H. COLTON on the right.

Philippine Market For Paper

Imports of paper into the Philippine Islands in 1936 were valued at 4,531,659 pesos (Philippine peso equals 50c United States currency), composed mainly of news print, book paper for the printing of magazines, wrapping paper, and writing paper. There is also a reasonably good market for old and overissue newspapers, imports of which are valued at about 250,000 pesos annually.

News print is ordered by the newspapers through indent agents located in Manila. Shipment is made direct by the paper mills in the United States, Canada and Europe, on an open account basis in the case of publishing companies of the best credit standing. Clean drafts are drawn periodically to settle the accounts. Smaller newspaper publishers and those of doubtful credit standing are asked to open confirmed letters of credit.

Magazine paper is imported for stock by a few dealers. The largest importer has a New York office which pays cash for all purchases, thus taking advantage of discounts. Smaller dealers import in various ways, sometimes opening a letter of credit, sometimes getting D/P terms. The paper is sold to printing companies and magazine publishers on open account.

Wrapping paper is ordered through agents by Chinese dealers and shipped on a D/P basis, 30 or 60 days. It is sold to shops and other users in Manila and throughout the Islands, and to paper bag manufacturers, on open account.

Writing paper is imported on a 60-day D/P basis by several dealers, most of whom have direct connections, though some order through indent agents. One of the largest importers pays cash through his New York office. It is sold to smaller dealers on open account. Some of the importers also do a retail business.

Old and over-issue newspapers are sold through indent agents to Chinese dealers, most of whom are primarily wholesale grocers. Usual import terms are 60 days D/P, sometimes 90 days. These newspapers are sold, along with the groceries, to smaller dealers throughout the Islands, who use them as wrapping paper. Usual terms are open account. (Office of the American Trade Commissioner, Manila.)

TO EVERY INDUSTRY

Reddy Kilowatt says:

"Better Lighting Pays Big Profits!"

A few of the things lighting has done for others—

- Improved employee morale.
- Showed increases in production of from 6 to 26% in ten typical plants.
- Reduced accidents from 425 to 170 per year in one plant, with a saving of $9,000 in compensation costs.
- Helped maintain quality of production.

and

- Permitted active, productive use of every square foot of space.

What it has done for others—it will do for you. Call us for *free* lighting advisory service.

PUGET SOUND POWER & LIGHT COMPANY

"To Best Serve the Public Interest"

Spies and Ruweler Visit St. Louis

Chas. Spies of the Cupples Company, Los Angeles, went to St. Louis December 3rd for a two weeks conference at the home office of his firm. Howard Ruweler, San Francisco representative of the firm, joined Mr. Spies in Los Angeles to travel east with him. They returned by way of San Francisco.

Japanese News Print Production Growing

The Okuyama News Service, Tokyo, recently released a report stating that Japanese production of news print during August, 1937, was the largest monthly output thus far recorded during 1937 and that it set a new all-time record for monthly production. August sales of news print, however, showed a decline of 1,432 tons compared with the July total, apparently due to the advent of the slack season. Production of news print during the first 8 months of 1937 totaled 273,495 short tons. (Office of the American Commercial Attache, Tokyo.)

Wrapping Paper Mill in Mexico

A wrapping paper plant with a capacity of from 10 to 12 metric tons per day is being constructed at Orizaba, State of Veracruz, Mexico, according to a report recently received from the office of the American Commercial Attache in Mexico City. The new enterprise will utilize cane pulp obtainable at Veracruz sugar mills at a reported cost of 7 pesos per metric ton (at present exchange rates Mexican peso is equivalent to 3.60 pesos for $1). It is reported that the machinery now being installed was purchased in the United States with the exception of some drying equipment and motors which were purchased in Germany.

Jobbers Negotiate Labor Agreement

After about ninety days of conferences during August, September, and October, a contract with the American Federation of Labor Warehousemen's Union has been negotiated through the instrumentality of a paper merchants committee of three for the paper ditsributing trade of southern California. It is understood that the contract became effective November 1st, and that it has been signed by individual firms. The agreement specifically provides against strikes and lockouts and predicates all future relations between the American Federation of Labor union and individual merchants upon a negotiating and arbitrating basis for issues that might be raised as to changes that might be asked by either side.

Lowe Urges Industry To Make Facts Clear

"Make the understanding of business economics and finance easy for the layman and you get the public's understanding and sympathy, and end public suspicion of industry," W. H. Lowe, president of The Paraffine Companies, Inc., urges American industry.

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"Take the mystery out of business symbols," Lowe recommends to business.

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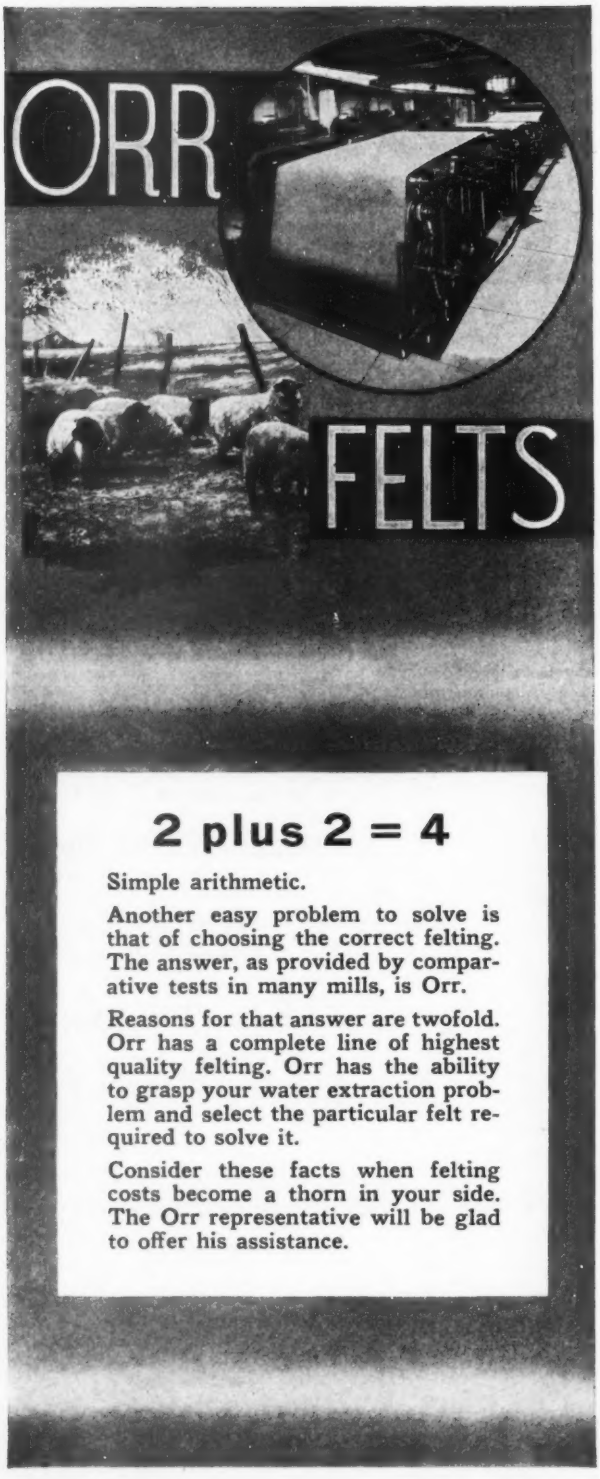
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Dunn & Bradstreet's Survey of the Paper Situation

Hesitancy, which has permeated many trade divisions, exerted a lighter retardative influence on the paper industry. Even though operations have slackened in some branches since Summer, **production for the ten months remained by a narrow range above the peak of the corresponding 1936 period.** Because of the rush to place orders last Spring, buying in wholesale markets also contracted from first-quarter proportions, but exceeded the 1936 volume. With both mills and wholesalers, there was more recession in coarse papers than in fine papers and news print.

Going 12.4 per cent over the 1929 peak of 3,406,552 short tons, news print production in the United States and Canada for the ten months of 1937 established a new record at 3,828,271 tons, according to the News Print Service Bureau. This exceeded the annual production of every year from 1930 to 1935, inclusive. Despite the restricted flow of new orders since early Fall, manufacturers estimated the 1937 production of paper and paperboard at 12,575,000 tons, or about **5 per cent** ahead of the 1936 all-time high, computed at 11,975,552 tons by the Bureau of Census.

Reopening of closed plants, starting long-idle machines, and speeding up existing ones provided the increased productive capacity for the news print division, as no additional plants were constructed. At other mills, production facilities were enlarged about 10 per cent this year by rehabilitation and building programs. Price structure generally was firm, with production curtailment planned to maintain steadiness. These were some of the major developments revealed by a survey of the paper industry, which was completed by Dun & Bradstreet, Inc., in late November.

Mill Schedules Reduced

Production in both the fine and coarse paper divisions of the industry was curtailed abruptly in August, and by October the contraction became tighter. Mills operating formerly on a six-day basis dropped to five or four days a week on lowered daily schedules. From a jump of 15 per cent for the first five months over the 1936 peak, the recession after June left the October rate of output under last year's. This cut the production gain over the ten months of 1936 to 5 to 15 from 10 to 30 per cent for the first quarter.

No slowing of news print output became evident until October. As a result of the recently initiated curtailment program. October production of 392,946 tons for the United States and Canada was only 2.8 per cent more than the 382,172 for October, 1936. This was the smallest year-to-year gain in twenty-two months. Each of the ten months of 1937, however, marked a new high for the period. In an unbroken rise from April, August production reached 399,024 tons, the largest monthly total in the history of the industry.

With five new highs attained during the period, combined news print production of the United States and Canada for the ten months of 1937 amounted to 3,828,271 short tons. This total surpassed every corresponding one in the tabulation of the News Print Service Bureau. It went 13.8 per cent over the 1936 ten-month output of 3,364,510 tons, 27.4 per cent over 1935, 31.0 over 1934, and 57.9 per cent over the 1933 low. The ten-month peak of 3,406,552 tons, which has been unmatched since 1929, was topped by 12.4 per cent.

Wholesale Orders Fewer

Spring bulge in orders to wholesalers of paper was built on a temporary shortage of pulp, rising prices, and imminent delivery delays, as labor outbreaks spread. With more pulp available and prices steadied, orders started to slacken. In some divisions, the Summer recession was deeper and more prolonged than usual, and inventories were heavier than for the corresponding period of the year preceding. Orders for paper specialties increased during the Summer, running from 10 to 15 per cent beyond the 1936 volume.

Instead of a year-to-year spread of 15 to 40 per cent recorded for the first quarter, the irregular downtrend after May had shortened the rise in wholesale orders for the ten months of 1937 to a range of 10 to 20 per cent from the 1936 volume. Most of this favorable showing was contributed by the larger tonnage. Part of it was due to the moderate price advances and the stronger demand for the better quality merchandise. The percentage of gain was wider in bond and catalogue papers than in the coarser grades.

APPLETON WIRE WORKS INC., APPLETON, WIS.

A few exceptional houses were well occupied through October. The majority of wholesalers, however, reported a marked decline starting in August, which was accentuated during September. **As a result, orders for the third quarter lagged 2 to 4 per cent behind the total for the second one.** September still was ahead of its 1936 comparative. October orders with many concerns, however, were under the previous year's volume by 3 to 5 per cent.

News Print Prices Higher

Upward revisions predominated in wholesale price alterations this year. Two or three narrow mark-ups in the first six months, however, had advanced quotations not more than 5 to 10 per cent from 1936 positions. Most of the increases were on coated, bond, tablet, uncoated white, and some of the book, magazine, gumming, and waxing grades.

During the late Summer, the rise in pulp quotations was halted by growing supply. In October, **book paper was reduced about $5 a ton, writing paper turned easier, and most of the coarse grades became steadier.** Controversy over the 1938 contract price of news print started in September. In the final decisions in October, two prices had been named.

One of the large producers set $48 a short ton for the first half of 1938 and $50 for the last half. The others agreed on $50 for the first half, with the last-half price to be announced later. The $50 represented a rise of $7.50 from the $42.50 for 1937. It was the third rise since 1933, when $40 a ton was the lowest price in thirty years.

More 77-B Applications

From 2 for the twelve months of 1936, the number of 77-B cases listed for paper manufacturers rose to 4 in the ten months of 1937. As 1 application was filed by a wholesaler, the total for the period was 5, the highest since the 12 for 1935. For 1934, the number was 4. Excepting this year's, annual totals were comprised of manufacturers.

Bankruptcies, on the other hand, continued the unchecked downtrend that started in 1933. With 1 manufacturer and 7 wholesalers and retailers, the 8 failures for the ten months were one-half the number for all of 1936, when 16 represented a new low. Average liabilities per failure also declined, dropping to $10,500 from $39,560 in 1936.

Complete insolvency record of the paper industry from 1927 to October, 1937, as compiled by Dun & Bradstreet, Inc., shows:

Paper Manufacturers

Year	Number	Liabilities
1927	9	$2,188,500
1928	7	877,600
1929	10	1,929,200
1930	4	1,371,000
1931	11	2,794,208
1932	9	2,577,451
1933	11	2,262,734
1934	9	894,000
1935	2	166,000
1936	5	529,000
*1937	1	12,000

Paper Wholesalers and Retailers

Year	Number	Liabilities
1927	20	$1,130,796
1928	24	570,807
1929	17	267,592
1930	14	210,300
1931	26	515,808
1932	33	936,347
1933	17	523,870
1934	16	333,000
1935	18	204,000
1936	11	104,000
*1937	7	72,000

(*) January to October, inclusive.

These statistics of failures in the paper industry are exclusive of applications under Section 77-B. From June 7, 1934, when Section 77-B of the New Bankruptcy Act became effective, to November 4, 1937, applications were filed by 24 manufacturers and by 1 wholesaler.

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The year's bumper cotton crop was, of course, responsible for the recent substantial price reductions on Cotton Dryer Felts. Hence, this is the second time within a short period that conditions outside the dryer felt industry have improved the basic advantage of Cotton Felts in COST PER TON OF PAPER DRIED.

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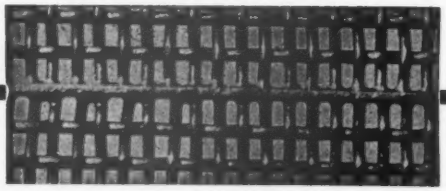

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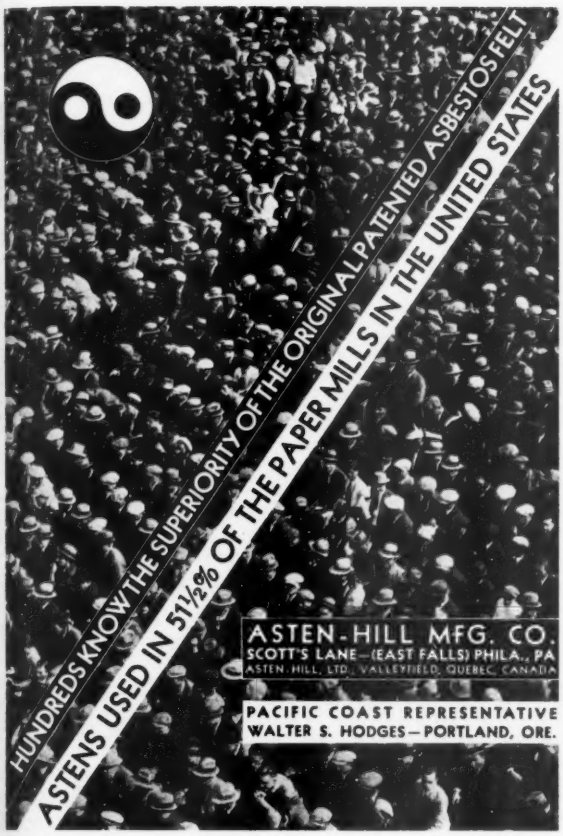
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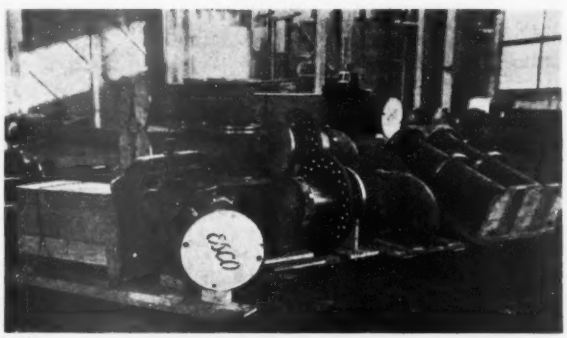

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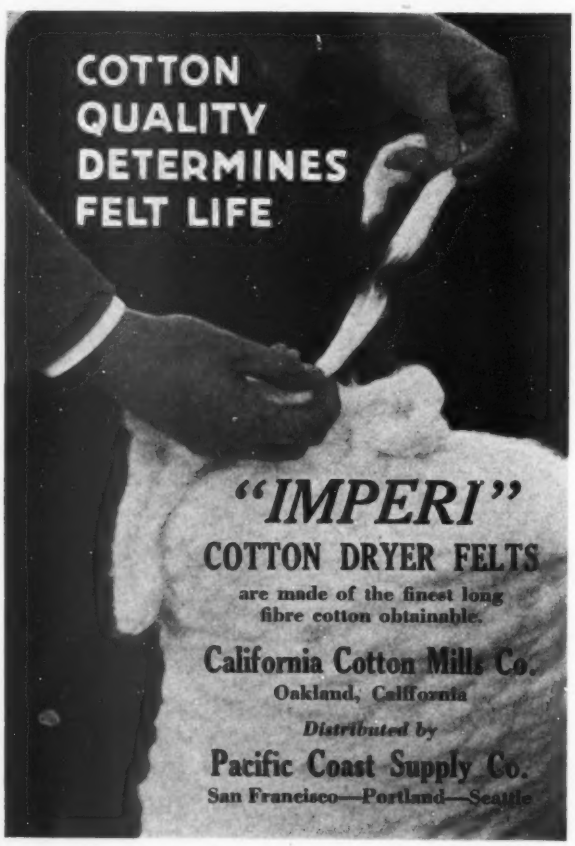

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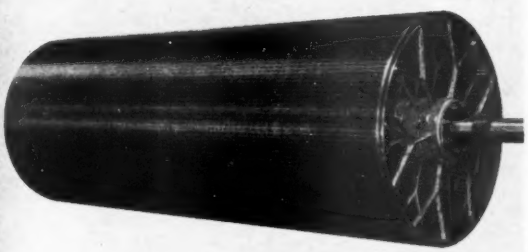

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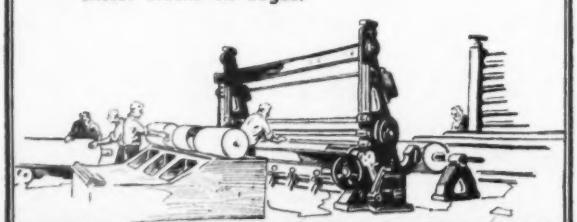
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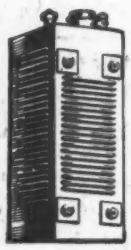

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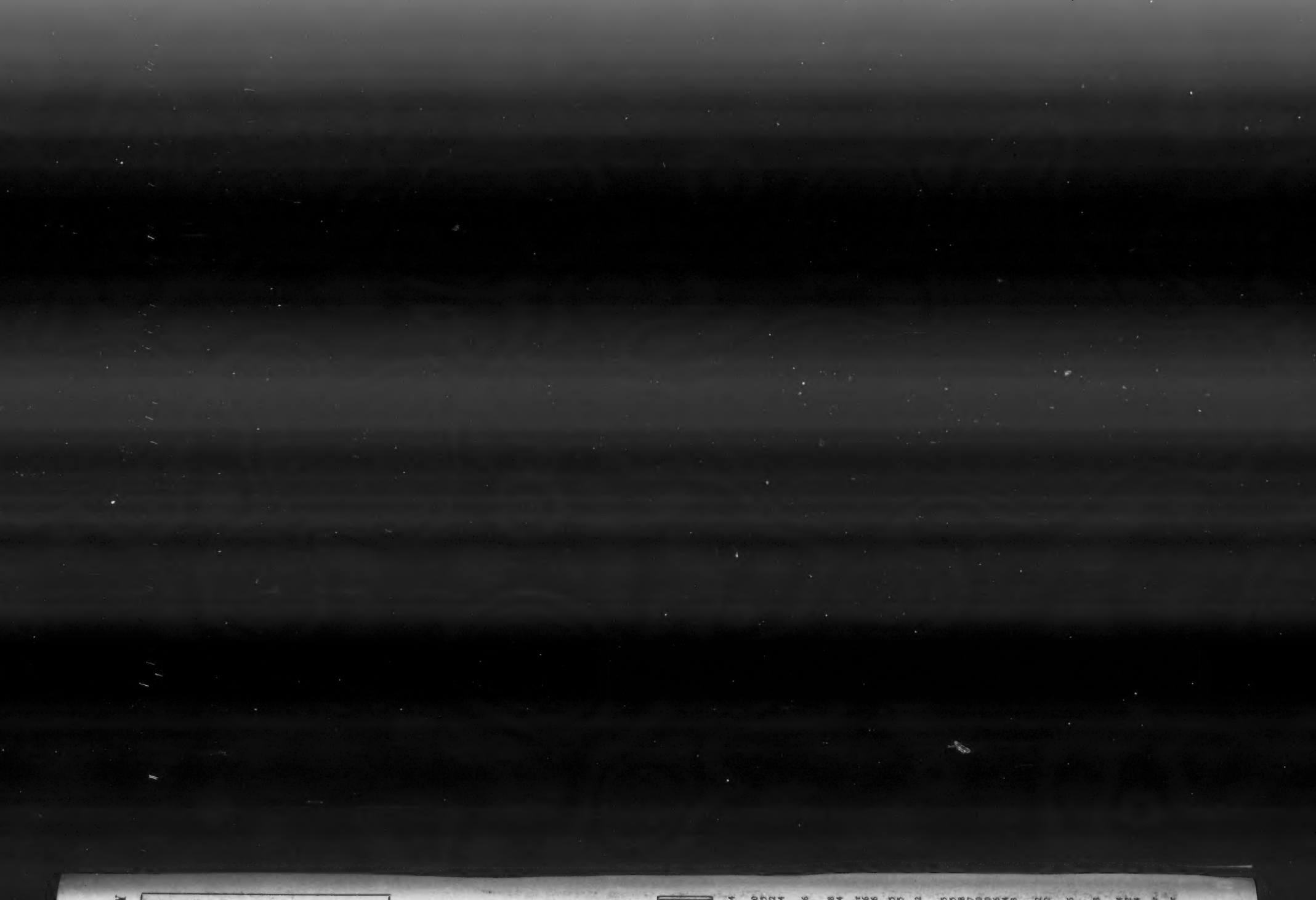

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The Westinghouse gear motors and special control have been in service six to seven days per week since installation. The drive has operated very satisfactorily and has given no trouble.

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The operators have suggested that the balance of our machines be so equipped.

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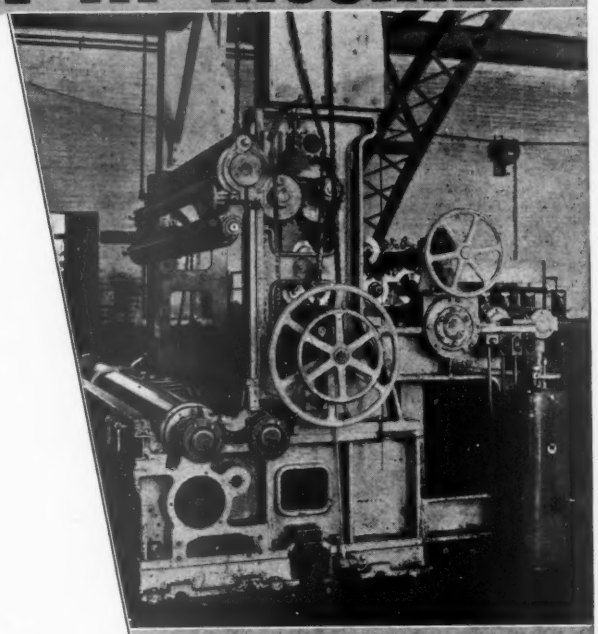
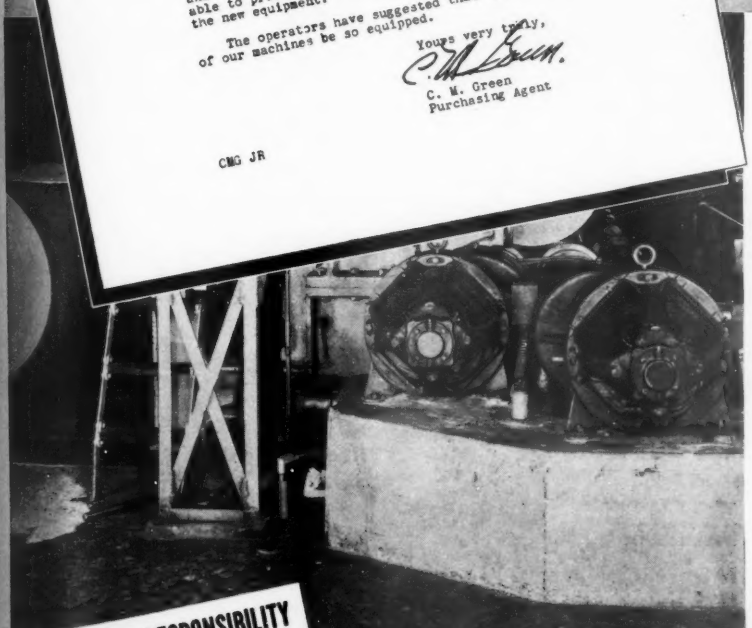
Purchasing Agent

CMG JR



Control for the two-motor winder drive installed at the Mosinee Paper Company, Mosinee, Wisconsin.



The two-motor winder drive is driven by 20 hp. direct current single reduction Westinghouse gearmotors.

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